NATIONAL GUIDELINES ON INFANT FEEDING
Ideal infant feeding comprises exclusive breastfeeding for 4 to 6 months, followed by sequential addition of semi-solid and solid foods to complement (not replace) breastmilk till the child is gradually able to eat normal family food (around 1 year). The latter period is also referred to as weaning. The term weaning does not denote termination of breastfeeding.

Appropriate feeding is crucial for the healthy growth and development of the infant. However, lack of confidence and widespread ignorance and misconceptions frequently result in improper management of infant feeding. The prominent areas of concern include discarding or minimal feeding of colostrum or delayed initiation of breastfeeding by nearly 80% of mothers, non-exclusive breastfeeding by 85 to 95% in the first 4 months of life, unnecessary utilization of commercial infant milk foods and animal milks, early termination of breastfeeding and premature or delayed introduction of semi-solids which may be contaminated, low in caloric density and fed less frequently. These inept feeding practices, directly or indirectly, contribute substantially to infectious illnesses, malnutrition and mortality in infants.

The aim of these guidelines is to promote suitable feeding practices in order to advance child care, growth and development; reduce the prevalence of protein energy malnutrition (PEM), Vitamin A deficiency and infectious diseases, particularly diarrhoea; and improve survival. These guidelines focus on the strategy of educating and motivating families to adopt proper infant feeding methods through the existing health infrastructure and other development programmes for women and children.
I. BREASTFEEDING

1. Advantages of Breastfeeding

It is a proven scientific fact that all commercial infant milk foods and animal milks are inferior to breast milk: (i) maternal milk is nutritious food for infants which is readily available, simple to feed, hygienic, develops emotional bonding and prevents allergic disorders; (ii) breastfeeding protects against several infections including diarrhoea and respiratory infections, and saves lives. An exclusively breastfed infant is about 14 times less likely to die from diarrhoea, 3 to 4 times less likely to die from respiratory diseases and 2 to 3 times less likely to die from other infections than a non-breastfed infant; (iii) breast milk is much more economical than artificial milk or powdered milk food - the average cost of feeding a 6 month old infant for 1 month on infant formula may even be equal to the average monthly per capita income; (iv) 'exclusive' breastfeeding exerts a strong contraceptive effect in the first 4 to 6 months post partum; (v) maternal benefits include earlier termination of post partum bleeding and protection against breast and ovarian cancer.

2. Preparation for Breastfeeding during Pregnancy

Expectant mothers, particularly primiparas, and those who have experienced difficulties with lactation management, should be motivated and
prepared to exclusively breastfeed. This should be achieved by educating them, through a personal approach, about the benefits and management of breastfeeding. In the last trimester of pregnancy, breasts and nipples should be examined and relevant advice given. Expectant mothers should be counselled to eat an extra helping of the family food with some green vegetables. In addition, they should be encouraged to rest for half to one hour and if possible switch to lighter work during the last trimester. Consumption of salt only in the form of 'iodized salt' should be ensured.

3. Starting Breastfeeds

Practically all mothers, including those with mild to moderate chronic malnutrition, can successfully breastfeed. Soon after delivery, the mother should be allowed to keep the newborn with her (rooming in). After a normal delivery, babies should receive the first breastfeed as soon as possible and preferably within one hour of birth. During this period and later, the normal newborn should not be given any other fluid or food like honey, ghutti, animal or powdered milk, tea, water or glucose water, since these are potentially harmful.

It is essential that the baby gets the first breastmilk called colostrum which is thicker and yellover than later milk and comes only in small amounts in the first few days. Colostrum is all the food and fluid needed at this time - no supplements are necessary, not even water.

The mother, especially with the first birth, may need help in the proper positioning for breastfeeding. Breastfeeds should be given as often as the baby desires and each feed should continue for as long as the infant wants to suckle.

After a caesarean section, breastfeeding should be started as soon as possible and preferably within 24 hours of delivery. The mother will need help for the first day or two to put the baby to the breast.
4. Exclusive Breastfeeding

During the first few months and, as far as possible, till the age of 4 to 6 months, 'exclusive' breastfeeding should be practised; young infants do not require any additional food or water or any other fluid such as tea, herbal water, glucose water or fruit drinks. Breastmilk alone is adequate to meet the hydration requirements even under the extremely hot and dry summer conditions prevailing in the country.

5. Diet of the Lactating Mother

A lactating woman should be advised to eat an extra helping of the family food and regularly eat green leafy vegetables. There is no need to avoid any specific foods; however, excessive caffeine, tobacco and alcohol should be discouraged. Consumption of salt only in the form of salt fortified with iodine, i.e., iodized salt, should be ensured.

6. Important Special Situations

6.1. Low Birth Weight Infants

Mother's milk is the best food for low birth weight babies. The borderline term and growth-retarded low birth weight babies can suckle fairly well at the breast and should be fed on demand. However, low birth weight and other high-risk infants who cannot suckle should be given expressed breastmilk in preference to formula feeds by appropriate techniques such as clean cup and spoon, tubes or paladchi. The child should be put directly to the breast as soon as possible.

6.2. Common Illnesses in the Infant

Breastmilk is the most easily digestible food for an ill baby. Feeding human milk is actu-
ally beneficial in common infantile ailments including diarrhoea and acute respiratory infections. Breastfeeding must, therefore, be ensured during such illnesses. The child may suckle less vigorously or for a shorter time and should receive the feeds at more frequent intervals. However, breastfeeding and, for that matter, any type of feeding should not be attempted in critically ill infants.

6.3. Illness in the Mother

Most common maternal illnesses do not require discontinuation of breastfeeding. Breastfeeding is recommended even with mastitis, breast abscesses and other infectious illnesses including urinary tract infection, tuberculosis, human immunodeficiency virus (AIDS), hepatitis and other viruses. However, physically incapacitating systemic illnesses may necessitate discontinuation of breastfeeding. Psychosis is a contraindication for breastfeeding on account of abnormal maternal behaviour. In such situations, whenever feasible, the breasts should be emptied frequently to maintain lactation.

6.4. Drug Intake by the Mother

Drug therapy should be avoided in lactating mothers and when necessary, a safer alternative should be prescribed. Drug intake should preferably be timed during or immediately after breastfeeding. The majority of the commonly used preparations are compatible with safe breastfeeding. Only a few drugs necessitate discontinuation of breastfeeding like anti-cancer and anti-thyroid therapy, radioactive preparations, ergot, gold salts and lithium.

6.5. Breastfeeding Substitutes

If a mother cannot for some reason exclusively breastfeed her young infant (below 4 to 6 months of age), for example a working mother, her expressed milk should be given to the baby in preference to other animal or formula milks.
If it is unavoidable to give non-human milk during the first 4 to 6 months of life, undiluted milk normally consumed by the family should be utilized and commercial infant milk foods should be strongly discouraged. Of course, such situations rarely arise. For infants, part of the excessive fat in buffalo’s milk should be removed by separating the cream from milk after boiling and cooling to room temperature. Young infants who are solely on cow’s or buffalo’s milk need additional plain water supplementation. A clean cup and spoon should be used instead of a bottle with a nipple.

II. ADDITION OF SEMI-SOLID AND SOLID FOODS

1. Importance of Appropriate Addition

After 4 to 6 months, many mothers do not have enough milk to form the sole source of nutrition for the infant and addition of other foods is, therefore, essential to prevent growth faltering. Delayed introduction of additional foods in an exclusively breastfed infant results in malnutrition. Improper introduction of these foods is fraught with dangers of: (i) diarrhoea due to infection from unhygienic preparation, and (ii) malnutrition related to inadequate calorie intake due to low frequency of feeding and low calorie density of the additional foods.

2. Timing of Introduction of Semi-solids

Semi-solid foods to supplement breastmilk should be introduced between 4 to 6 months of age and preferably at 6 months in poor communities. Within this age range, the individual decision should be guided by the growth performance and physiological maturation of the infant. To minimize any interference with the normal course of breastfeeding, semi-solid foods should preferably be given between breastfeeds.
3. Continuation of Breastfeeding
At first breastmilk is the baby’s main food and the weaning diet is extra. Later, even when more semi-solid food is added, breastmilk still continues to remain an important component of the infant’s diet. Breastfeeding should continue for as long as feasible and preferably well into the second year of life.

4. Feeding Guidelines
4.1. Formulate Additional Foods from the Usual Family Diet
The weaning (complementary) diet should be cooked from the usual family foods in a thickened but mashed (softened) form and variety attempted. Use of commercial weaning foods should, as far as possible, be avoided.

Giving the family food family pot feeding - in a mashed form, without or before adding hot spices or extra salt (only iodized salt) and providing something extra like oil/fat and green vegetables is best since it is economical, saves time and the infant grows up accustomed to the traditional foods.

4.2. Enhancing Nutritive Value
The nutritive value of these foods should be enhanced by enrichment of the staple cereal with pulses (for proteins), oil/fat/sugar (for increasing calorie density), green vegetables (for Vitamins, especially A, B and C, and iron) and iodized salt (for iodine). Advantage should be derived from the usual diet pattern of a mixture of cereals and pulses (idli, dosa, pongal, khichdi,
missiroti, etc.) by addition of some oil/fat/sugar and green vegetables. Dilution of the weaning diet and use of watery gruel and lentil or vegetable water should be strongly discouraged. Use of animal milk, milk products, fruits, eggs, fish or meat, if culturally acceptable and affordable, can be encouraged. The bulk of the weaning food can be reduced by malting of grains/cereals.

4.3. Frequency, Amount and Consistency of Feeding - Broad Age Range Related Guidelines

Infants vary tremendously in the amount that they require and eat. In general, therefore, mothers should be advised to prepare and offer a mixed nourishing diet based on the usual family foods and leave it to the baby to take as much as is desired. The child's general activity and growth, as judged by the family and the health worker and confirmed by weighing as often as possible depending on the facilities, is good evidence of adequate food intake. However, the following broad feeding guidelines can be offered.

4.3.1. Four to Six Months

Between the age of 4 to 6 months one can start with cereal-based porridge (suji, wheat flour, ground rice, ragi, millet, etc.) enriched with oil/fat and/or animal milk (if possible) or mashed fruits like banana (or other seasonal fruits like papaya or mango). One or two teaspoonfuls are enough to start with and the quantity and frequency should be gradually increased. At the end of this phase the baby should be consuming about 50 to 60 g of food (half a cup) per day.

4.3.2. Six to Nine Months

From 6 to 9 months of age the baby should be used to feeding from the family pot (mashed rice with dal, khichri, a little chappati softened in dal or milk, dahi, mashed vegetables, fruits, etc., enriched with some oil/fat and green vegetables). They need 4 to 5 weaning meals a day, in addition to regular breastfeeding.
4.3.3. Nine to Twelve Months

At about 9 months, babies can start chewing on soft food. The food does not need to be mashed but, if required, can be chopped or pounded. A variety of household foods should be given 4 to 5 times a day and the quantity gradually increased. By about 1 year, young children should be eating foods cooked for the family but at least 4 to 5 times a day. A child of 1 to 2 years needs about half the food that the mother eats.

5. Preparation and Storage of Weaning Foods

Careful hygienic preparation and storage of weaning foods is crucial to prevent contamination. Hands should be thoroughly washed with soap and water before preparation and feeding, and the cooking area and utensils must be clean. The foods should preferably be fresh, cooked or boiled well and, if feasible, prepared immediately before they are to be eaten. If food has been kept for over two hours, it is desirable to reheat it thoroughly until it boils before consumption.

6. Feeding During and After Common Illnesses

Feeding should continue during such common ailments as diarrhea and respiratory infections unless the medical condition of the child contraindicates it. Restriction or dilution of food should be discouraged. Despite anorexia, the infant can be coaxed to eat small quantities but more frequently (every 2 to 3 hours). After the illness, the child should be provided more than the usual diet to regain the weight lost.
II. Operational Guidelines for Promotion of Proper Infant Feeding

These guidelines should form an integral part of the child development programmes for women and children. They should be effectively operationalized through the managers and functionaries of the ongoing programmes primarily related to women and child development, such as Integrated Child Development Services (ICDS), Child Survival and Safe Motherhood Programme (CSSM), Urban Basic Services for the Poor (UBSP), Development of Women and Children in Rural Areas (DWCA), and programmes implemented by the non-government organizations (NGOs). The managers and functionaries of these programmes should be practically oriented to the correct principles of infant feeding and this subject should form an essential part of the nursing and undergraduate medical curriculum. All health care providers should actively educate and motivate the mothers and other relatives for adoption of appropriate infant feeding practices.
feeding methods. The medical and paramedical personnel of the Departments of Pediatrics and Obstetrics and Gynaecology should perform the central role for institutional deliveries. In addition, the services of other community level workers and involvement of formal and non-formal education, the media and voluntary organizations is recommended to be utilized for the effective implementation of these guidelines.

In this context, due attention should be given to The Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act of Parliament, 1992, and its contents adhered to.

II. Institutional Promotion of Appropriate Breastfeeding

In order to actively protect, promote and support breastfeeding, every facility providing maternity services and care for newborn infants should practise the following 10 steps:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in the skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within an 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 breast milk, unless medically indicated.
7. Practise 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.
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**TABLE I: Operational Guidelines for the Promotion of Proper Infant Feeding**

<table>
<thead>
<tr>
<th>Contact Point</th>
<th>Promotional Activity</th>
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| Antenatal check-ups    | - Inform of benefits and examine for exclusive breastfeeding.  
                        |   - Particularly primiparas and those who earlier experienced difficulties.  
                        |   - Examination of breasts and nipples in third trimester.  
                        |   - Advise adequate food and rest.  
                        |   - Encourage feeding of colostrum: discourage prelacteal foods.  
                        |                                                                                                                                                                                                                             |
| Maternal tetanus toxoid administration | - Ensure the mother receives at least one dose of maternal tetanus toxoid at least two hours before birth.  
                        |   - Demonstrate an art of breastfeeding and correct positioning, especially for first child.  
                        |   - Prevent intake of other fluids.  
                        |   - Advise exclusive breastfeeding for first 4 to 6 months.  
                        |                                                                                                                                                                                                                             |
| Delivery               | - Confirm exclusive breastfeeding: Sort out practical problems in lactation management.  
                        |   - Third dose: Advise timing of addition of semi-solids within scope of usual family foods: provide broad age-related guidelines: stress on energy density of additional foods; consistency, feeding frequency and hygiene preparation.  
                        |   - Advise feeding of semi-solid foods within scope of usual family foods.  
                        |   - Stress hygiene and energy density of weaning foods.  
                        |   - Provide broad age-related guidelines for amount and frequency of foods.  
                        |   - Ensure continued breastfeeding.  
                        |                                                                                                                                                                                                                             |
| Immunization for DPT and OPV (1st, 2nd and 3rd doses) | - Confirm satisfactory progress of the addition of semi-solids.  
                        |   - Sort out practical problems.  
                        |   - Stress hygiene and energy density and ensure broad age-related guidelines for amount and frequency of foods.  
                        |   - Confirm breastfeeding and advise continuation till 1 to 2 years of age.  
                        |                                                                                                                                                                                                                             |
| Between 4 to 6 months of age of infant - just prior to introduction of semi-solids if feasible | - Achieve timing of introduction of semi-solids within scope of usual family foods.  
                        |   - Stress hygiene and energy density of semi-solids.  
                        |   - Provide broad age-related guidelines for amount and frequency of foods.  
                        |   - Ensure continued breastfeeding.  
                        |                                                                                                                                                                                                                             |
| Measles immunization   | - Advise exclusive breastfeeding for first 4 to 6 months.  
                        |   - Confirm exclusive breastfeeding.  
                        |   - Sort out practical problems in lactation management.  
                        |   - Stress hygiene and energy density of additional foods; consistency, feeding frequency and hygiene preparation.  
                        |                                                                                                                                                                                                                             |
| Common Illnesses       | - Ensure food intake (especially breastmilk) unless contraindicated.  
                        |   - Perform age-related promotional activity for adoption of appropriate infant feeding practices.  
                        |   - Advise extra food after illness.  
                        |                                                                                                                                                                                                                             |

*In case there is contact at this age or if it is feasible.*
NATIONAL PLAN OF ACTION
A COMMITMENT TO THE CHILD
A GOVERNMENT OF INDIA DEPARTMENT OF WOMEN AND CHILD DEVELOPMENT 1992

NUTRITION

Major Goal
Between 1990 and the year 2000 A.D., reduction in severe and moderate malnutrition among under-5 children by half.

Objectives

(i) Reduction in severe as well as moderate malnutrition among under-5 children by half of 1990 levels
(ii) Reduction in incidence of low birth weight (2.5 kg or less) babies
(iii) Reduction of iron deficiency anemia in women
(iv) Control of iodine deficiency disorders
(v) Control of Vitamin A deficiency and its consequences including blindness
(vi) Empowerment of all women to breastfeed their children exclusively for 4 to 6 months and to continue breast-feeding with complementary food, well into the second year
(vii) Growth promotion and its regular monitoring to be institutionalized by the end of the 1990s
(viii) Dissemination of knowledge and supporting services to increase food production to ensure household food security