

17. NUTRITION DURING SPECIAL STAGE : LACTATION

The duration of lactation period starts from birth and remains till 1 year or when child is dependent on breast feeding. This period is known as breast feeding or milk- feeding. The mother's milk is equal to elixir, initial food and blessing of God after the birth of newborn baby. The mother's milk is birth right of every child. Baby/Child should not be detained from mother's milk. Breast feeding should be initiated just after birth.

Mother's milk contain all the nutrients in balance form for good health, growth & development of child. A infant depends only on mother's milk for the first 3 months. The breast – feeding is compulsory for 6 months as infant usually drinks milk of mother till 1-1½ years, but along with milk, he also starts to eat homemade food. So it is very necessary for lactating mother to be healthy. It will affect the rate of production of milk in breast if mother is not healthy. It also affects the quality of milk if mother is malnourished. It will also affect infant's health as its growth or development will not take place properly and he may get disease.

The benefits of breast-feeding for infants have already been explained for nutrition in infancy. The breast feeding is not only importantly/necessary for infant but also for mother because:

1. It develops emotional bonding between infant and mother. Mother feels self-contentment and pleasure when a mother breast feed her child. Infant also feels secured in the arms of mother. This relation between an infant and his/her mother is the starting of first social relation.
2. The breast feeding acts as a natural birth control

system, as mother who does breast- feeding for longer period, has lesser chances of getting pregnant.

3. Muscles of uterus gets in to its shape quickly due to breast-feeding.
4. The fat lobules which are deposited at the time of pregnancy the body helps in milk production through breast-feeding. Mother gets his initial body's shape and size within 6-10 months .
5. The breast feeding does not require any money or expenditure. It is easily available according to the needs of infant.
6. The breast feeding reduces the chance of breast cancer.

Healthy Indian woman secretes 850 ml. milk per day and after some time its amount reduced to 600 ml. per day. Studies also show that during 3-4 months, lactating mother secretes milk up to 1000 ml. per day. On the other hand, in weak and unhealthy women, the amount of milk secretion in first six months is 600-700 ml. and it is reduced to 400-500 ml.

The reasons of less milk secretion in lactating mother are as follows :

1. Mal-nourishment and less body weight
2. Less nutritive food during lactation period.
3. Doing fast during lactation phase.
4. Modernized thoughts in which breast feeding is not considered good.
5. The job working hours is also one of reason as infant does not get mother's milk for 7-8 hours.
6. Cracks in nipples, improper erection of nipple and deposition of milk in milk ducts makes the

breast heavy and it causes difficulty for an infant to suck the milk.

7. Any kind of deformity in lips and tongue of infant causes problem in breast feeding.
8. Less secretion of hormones responsible for the milk secretion.
9. Increasing time duration of lactation period.
10. Very primitive, excitement, aggressiveness of mother.

Reduces the production and secretion of milk if infant suck less milk or does not have proper breast feeding due to any reason. So, it is necessary that mother takes care of health, rest and proper nutrition so that infant gets milk time to time. Mother should stay happy and breast feed regularly. Consult doctor immediately if any problem arises during breast feeding.

Nutritional Requirements :

The nutrient requirements of an infants fulfills by mother's milk. So it is necessary that lactating mother should take proper meals not only for herself but also

for infant, therefore regular secretion of milk should be there. Requirement for nutrients during lactation is depicted in table 17.1.

All other nutrients except iron salts and magnesium have been proposed in table, which are essential for the proper nutrition and formation of milk in mother. The total essential quantity of nutrients can be ascertained for the woman in this condition by adding additional requirements of proposed nutrients of the general requirements of working women of a different category. The extra requirement of energy can be fulfilled by two sources:- daily meals (extra energy). Second deposited fat of lobules during lactation in mothers body. For this stage extra requirement of iron elements is not given because the baby body accumulate iron in his liver to meet the needs of the first 3 months of birth. Iron is not met through breast milk because the iron does not found in mother's milk. There is no loss of iron content by the bloodstream due to the absence of a monthly discharge in the menstruation, hence extra iron is not required during lactation.

Table 17.1:- Daily recommended allowances of nutrients during lactation (NIN, 2010)

Nutrients	Activity			Additional	
	Low	Medium	High	0-6	6-12
Energy(K.cal)	1900	2230	2850	+ 600	+ 520
Protein (g.)	55	55	55	+ 19	+ 13
Visible fat (g.)	20	25	30	30	30
Calcium (mg.)	600	600	600	1200	1200
Iron (mg.)	21	21	21	-	-
Beta carotene (ug)	4800	4800	4800	7600	7600
Thamine (mg.)	1	1.1	1.4	+ 0.3	+ 0.2
Riboflavin (mg.)	1.1	1.3	1.7	+ 0.4	+ 0.3
Niacin (mg.)	12	14	16	+ 4	+ 3
pyridoxine (mg.)	2	2	2	2.5	2.5
Vitamin 'c'(mg.)	40	40	40	80	80
Dietary Folat (ug)	200	200	200	300	300
Vitamin B ₁₂ (ug)	1	1	1	1.5	1.5
Magnesium (mg.)	310	310	310	310	310
Zinc (mg.)	10	10	10	12	12

Dietary management :

The lactating mother gets special care after delivery, during first 1¼ months or 40 days which includes oil massage, bath of warm water and rest. Mother should be given high energy and protein diet during lactation. Lactating mother gets home-made medicine like:-sweet dishes made up of ajwain, sonth, laddu, gond, supari, haladi, batisha combined with excessive ghee, jaggery, sugar, dry fruits like cashew, raisin, almond, walnut etc. These are highly rich in protein, fats & minerals, which provide extra energy, protein for the secretion of milk. These are helpful in improving health, maintaining immunity, balancing body temperature. It provides relief in back pain, stomach ache etc. Control bleeding from uterus, re-secretion/contraction of uterus & mother feels healthy. Lactating mother should be given milk & milk products, desi ghee halwa, less spicy food, soup, porridge, moong dal, spinach, fenugreek etc. Lactating mother should be given boiled water of ajwain and battisa for 1¼ months to maintain immunity. Battisa is made up of 32 ayurvedic roots which is beneficial for lactating mother.

Mother should not be consumed maize, millet, rice, other vegetables like Gobi, Pea, Lady finger, spices etc. for 1¼ months during lactating period as these create flatulence problems for both mother & child.

In this era of modernization, working class women don't take these home-made medicines as they believe that they will be fatty. Researches on lactating mothers show that these home-made medicines are beneficial even in today's context. These are helpful not only in production of milk but also in maintenance of mother health. Homemade medicines combined with regular breast feeding process is beneficial for mother as well as for infant in its growth and development.

Lactating mother should take extra food regularly after 1¼ months for the secretion of milk & should feed infant till 1 years or till infant wants to breast feed. Mother should choose various food stuff from table in appropriate amount to breast feed her child.

Table 17.2: Balance diet for lactating mother (NIN-2010)

Food groups	Quantity of Food Items(gm.)			Additional Requirement
	Activity			
	Low	Medium	High	
Cereals	270	330	480	+ 30
Pulses	60	75	90	+ 60
Milk (ml.)	300	300	300	+ 200
Root Vegetable	200	200	200	-
Green Leafy Vegetable	100	100	100	+ 50
Other Veg.	200	200	200	-
Fruit	100	100	100	+ 100
Sugar	20	30	45	-
Ghee/Oil	20	25	30	+ 10

Note : Non-vegetarian mother can exchange 30 gm dal with 50 gm of egg/meat/fish.

Following points should be kept in mind while planning meal for lactating mother :

1. Meals are planned according to the nutritional requirements which includes needs for the mother and for milk production. A modification of normal diet is worked out for a nursing mother. Additional amounts of protein and energy foods are included in this diet. In most regions, it is customary to feed the nursing mother additional amount of fat (ghee), which supplies energy and vitamin A or some special preparations (daliya, Ladoos of Methi, mung, garden cress seeds) which contain sources of protein, iron, calcium and vitamin B. Besides this, green leafy vegetables and at least two servings of citrus fruit be added.
2. Condiments should be sparingly used. Apart from being harmful may give a flavour to the milk, if used in excess may be repulsive to the baby.
3. Besides three large meals, two small meals may be planned to meet the increased requirements.
4. Fluid intake should be adequate to meet the requirements for milk production.
5. Socio-economic status of the family should be considered, and the selection of food stuffs should be according to the budget of the family e.g. groundnuts, pulses-cereals may be taken instead of meat and milk products for protein sources. Similarly green leafy vegetables may be selected instead of egg and meat products for cut down the cost of the diet.
6. Variety should be provided in terms of color, texture and flavor.
7. Likes and dislikes of the mother should be taken into consideration.
8. Age of the mother be taken into consideration. An adolescent mother, who has not completed her own growth, will need additional food for her own growth.
9. The food should be served in a pleasant atmosphere.
10. Meals should be given 5-6 times with little intervals rather than 3- times.

Important Points :

1. The duration of lactation stage starts with birth of infant and remains till one year or upto infant depends on breast feeding.
2. Milk is enough from birth of infant upto 3 month.
3. The production, secretion rate & its composition depends on the nutrition level of mother.
4. Initially healthy Indian women secrete 850 ml. milk per day.
5. Balanced amount of water and liquid - based foods should be given to mother for milk production and secretion.
6. The extra amount of all nutritive elements are given in the lactation phase so that mother's nutrition level, development and growth of an infant can take place in normal way.
7. The traditional meals provide extra energy and nutrients for the secretion of milk. These also act as medicine, so these are beneficial for health.
8. It is necessary for lactating mother to take all food stuff in balanced amount for the successful breast feeding.

Question :

1. Choose the correct answers for the following questions :
 - (i) An infant is depended on mother's milk.
(a) First 3 month
(b) First 4 month
(c) First 6 month
(d) First 1 month
 - (ii) Healthy woman secrete amount of milk.
(a) 750 ml. (b) 900 ml.
(c) 1000 ml. (d) 600 ml.
 - (iii) The requirement of energy is increases by in lactation period (0-6 months)
(a) 400 Kcal. (b) 500 Kcal.
(c) 450 Kcal. (d) 600 Kcal.
 - (iv) In today's time lactating mothers do not consume traditional dishes because they might get :
(a) Fatty (b) Clumsy
(c) Round (d) All of the above

2. Fill in the blanks :
 - (i) The lactation period should starts with birth of an infant and remains till
 - (ii) In the lactation stage extra amount of minerals is not mentioned.
 - (iii) The consumption of homemade medicines' during lactation helps in and of milk.
 - (iv) women should increase protein quality by mixing food like milk + pulses, cereal + pulses, cereal + milk should be consumed.
3. Breast feeding is beneficial for lactating mother. Explain.
4. Describe the causes of less secretion of milk.
5. Which points are necessary to be kept in mind while planning meal for lactating mother ?
6. Describe the importance of traditional method of medicines given to lactating mother upto 1¼ months.

Answer Key :

1. (i) a (ii) d (iii) d (iv) d
2. (i) breast feeding (ii) Iron
(iii) Production and secretion (iv) Vegetarian