

□ Colostrum and its importance

At the end of pregnancy the first fluid made by the human breast is colostrum. This thick, yellowish fluid may leak from the breast during late pregnancy and is produced in earnest for a few days to a week after birth.

(i) Colostrum contains antibody (IgA) only available to the baby by breast milk because it is not passed through the placenta, which protects the baby from germs which enter the baby from the throat, lungs and intestines. These germs are only a problem after delivery and therefore the mother provides this for the infant at its time of need through colostrums. These antibodies are most plentiful a few hours after birth so it is important to feed the baby during this time.

(ii) One component of colostrum, the Lactobacillus bifidus factor, encourages the growth of Lactobacillus bifidus bacteria. These bacteria limit the growth of potentially toxic bacteria in the intestine. This immune factor protects from some GI tract disease.

Overall, colostrum promotes the intestinal health of the infant.

(iii) Colostrum is very rich in vit A, more protein, less fat and carbohydrate lactose than the mature milk.

(iv) Colostrum is basically first immunization, child receives from the mother.

I Composition of Colostrum.

Constituents	Human
Protein (g)	1.2
Casein (g)	0.4
Lactalbumin (g)	0.3
Lactoglobulin (g)	0.2
Fat (g)	3.8
Lactose (g)	7.0
Calories (Kcal)	71
Mineral matter (g)	0.24
Calcium ^(Ca) (mg)	33
Phosphorus ^(P) (mg)	15
Chloride ^(Cl) (mg)	43
Magnesium ^(Mg) (mg)	4
Potassium ^(K) (mg)	55
Sodium ^(Na) (mg)	15
Iron ^(Fe) (mg)	0.15
Copper ^(Cu) (mg)	0.04
Iodine ^(I) (mg)	0.007
Manganese ^(Mn) (mg)	0.7
Zinc ^(Zn) (mg)	0.53
<u>Vitamins</u>	
Vitamin A (I.U)	160
Vitamin D (I.U)	1.4
Thiamine ^(B1) (mg)	0.017
Riboflavin ^(B2) (mg)	0.04
Nicotinic acid ^(B3) (mg)	0.17
Pantothenic acid ^(B5) (mg)	0.20
Vitamin B6 (mg)	0.001
Folic acid (μg)	1.3
Biotin ^(B7) (μg)	0.4
Vitamin B12 (μg)	0.03
Vitamin C (mg)	4.0

Q. What is complementary Feeding?

Ans:- Complementary feeding means giving other foods in addition to breast milk. These other foods are called complementary foods. During the period of complementary feeding, a baby gradually becomes accustomed to eating family foods. At the end of this period (usually at around the age of 2 years), breast milk is entirely replaced by family foods, although a child may still sometimes suckle for comfort.

There are two kind of complementary foods —

- (i) Specially prepared foods and
- (ii) Usual family foods that are modified to make them easy to eat and provide enough nutrients.

① causes ⇒ As a baby grows and becomes more active, an age is reached when breast milk alone is not sufficient to meet the child's nutritional needs.

So, complementary foods are then needed to fill the gap between the total nutritional needs of the child and the amounts provided by breast milk.

II. Exclusive Breast Feeding

Exclusive breast feeding means that babies are given only breast milk and nothing else - no other milk, food, drink and not even water. During the first six months exclusive breast feeding should be practiced. Breast milk provides best and complete nourishment to the baby during the first six months. The babies who are exclusively breast fed do not require anything else namely additional food or fluid, herbal waters, glucose water, fruit drinks or water during the first six months.

Breast milk alone is adequate to meet the hydration requirement even under the extremely hot and dry summer conditions prevailing in the country.

It is important to ensure exclusive breast feeding of all babies as it saves babies from diarrhoea and pneumonia. It also helps in reducing specially the ear infection and risk of attacks of asthma and allergies.

Recent WHO studies estimate that death rate in babies can go down four times if they are exclusively breast fed for the first six months.

It must be remembered that benefits of breast feeding are reduced if it is not exclusive breast feeding.

III. WEANING

Through out the infant feeding process parents learn early to recognise their babies signs of hunger and satiety and follow the babies leads. Babies are individual and set their own particular needs according to age, activity level, growth rate and metabolic efficiency. If the mother decided to provide other foods to child by the replacement for breast milk that is weaning.

American academy of pediatrics recommends (1997) breast feeding at least 12 months after weaning should start.

For some children, growing physical capacity and desire for independence lead to self weaning.

Composition ⇒ Weaning should never be cow's milk during 1st year of life.

Because unmodified cow's milk is not suitable for infants, its concentration may cause gastro intestinal bleeding. So, American academy of pediatrics recommends solids with formula feeding.

Bottle Feeding

Q. Which circumstances induce the bottle feeding to baby?

Ans:- There are many reasons why a mother choose to feed with artificial formula or to wean her baby from the breast to bottle feed. — There are —

1. Mother does not wish to breast feed —

(a) Some mother do not want to breast feed her baby if they are engaged in the job. or for example - Modeling. There are some misconception about breast feeding.

(b) Many mother feel uncomfortable with breast feed.

2. The baby unable to breast feed because of an illness or a congenital condition that prevent breast feeding.

3. Some premature (Pre-term) baby suffering from respiratory distress syndrome (RDS). Where the Baby should care to incubate to recover this syndrome, in this case baby is to given bottle feeding.

4. The mother has an illness that prevent her from breast feeding or, for example HIV positive.

5. The mother wishes to wean her baby from the breast prior to 12 months of age.

6. The mother is going back to her work place that does not support facilities for breast feeding or expressing breast milk.

1] What is "MIXED FEEDING"?

Most traditional food given to the infants in the different parts of the country are example of the mixed food khichdi, dalia, suji-kheer, upma, Idli, dakhla, bhaat-bhaji etc.

- i) Mixed feeding is traditional food given after a little modification so as to make it suitable for the child.
- ii) For instance^{example} mashed Idli with little oil and sugar is good for mixed feeding to infant. Similarly bhaat can make more nutritious by adding more cooked dal or vegetable.

Khichdi can make more nutritious by adding more or two vegetable in it while cooking.

(The importance of this mixed feeding that that most of the foods bulky and a child can't eat more at a time. Hence mixed food is important to give energy) mixed feed at frequent intervals to the child with a view to ensure adequate energy intake by the child.

(Two or more food mixing give result a malted food. Maltng reduces viscosity of the food and hence child can't move at a time.) Infant food mixes prepared after maltng cereal or pulse will provide more energy to the child.

Flours of malted food when mixed with other food help in reducing the viscosity of that food.

Nutritional Importance of Breast Feeding

1. I.C.M.R recommended an intake of 120 kcal/kg body weight in the first 6 months and 100 kcal/kg body weight in next 6 months for rapid growth of infants. This necessary is fulfilled by breast milk.
- 2) Rapid growth also demand higher intake of proteins and easily digestively protein ideally supplied by breast milk.
- 3) I.C.M.R. recommended a protein intake 2.3-1.8 gm/kg body weight in the first 6 months and 1.8-1.5 gm/kg body weight in the next 6 months supplied by breast milk.
- 4) Breast milk provides all nutrients in the right proportion as needed for the rate of growth of the infant and easily digestible forms.
- 5) Breast milk forms a much finer and more flocculent clud in the stomach.
- 6) Breast milk contain major carbohydrate disaccharide - lactose, plays a major role in maintaining low electrolyte concentration.
- 7) Fat in breast milk contain polyunsaturated fatty acid (PUFA) especially ~~whole~~ linoleic acid and linoleic acid.
- 8) Fat soluble and water soluble vitamins are in good amounts but their concentration depends on mother's diet.
- 9) Among minerals the Na^{2+} contain is low in breast milk because of limited capacity of new borns kidney to deal with a load of solute.
- 10) According to babies needs of vitamins, minerals, mothers may adjust this necessary by consuming extra