BREASTFEEDING

(Human Nutrition)

Breastfeeding is fundamental to the health and development of children, and important for the health of their mothers. To achieve this, a baby should be exclusively breastfed for the first 6 months of life. Breast milk is a unique and very complex fluid containing well over 100 documentedconstituents. It is considered to be a 'living fluid', for in addition to its nutrient content, it contains anti-bacterial, anti-viral, anti-infective factors as well as hormones, enzymes and specialized growth factors. It is well established that it reduces infant morbidity and mortality and contributes to the health and well-being of a nation.

Unique Properties of Human Milk for Human Infants

Breast milk is more than just good nutrition. Human breast milk is specific for the needs of the human infant, just as the milk of other mammals is specifically designed for their offspring. It provides a baby with a number of important short- and long-term benefits.

a) Nutritional benefits

- It contains the most suitable proteins and fats for a baby and in right quantities. Cholesterol, desoxyhexanoic acid and taurine are particularly important for brain growth.
- Lactose content is higher than any other milk, which is what a human baby needs.
- Vitamin A, C, D & E contents are more than that in cow's milk and their bioavailability is also high. Therefore breastfed baby does not require any vitamin supplements for first six months.
- Iron in breast milk is better absorbed than iron in cow's milk.
- It contains enough water for the baby, even in a hot climate. There is no need to give extra water to the babies.
- It contains correct amount of salt; calcium and phosphates are in right proportion.
- Lipase present helps to digest fat. This enzyme is not present in animal milk or formula milk

b) Immunological benefits

Breast milk is clean and free of pathogenic bacteria. So it cannot make a baby ill. Breastfed babies as compared to artificially fed babies have reduced incidence of gastrointestinal and respiratory infections. Thus, they are less likely to die than bottle-fed babies

- Breast milk contains antibodies (immunoglobulins) to combat many common infections.
- It contains live cells and lysozymes, which protect against infections. It also contains an antiviral substance, interferon.

- Bifidus factor promotes the growth of Lactobacillus bifidus in the baby's intestine. This prevents growth of harmful bacteria
- Lactofenin in breast milk binds free iron which also prevents the growth of harmful bacteria that need iron, yet allows the iron to be absorbed by the baby.
- Breastfed babies are less likely to get infantile allergies and eczemas than artificially fed babies.

C) Other Benefits

- A bitby who continues to breastfed during an infection recovers more quickly than who stops breastfeeding.
- Breast milk feeds must be continued even if a baby has diarrhoea.
- Breast fed babies are less likely to develop colic.

Benefits of Breastfeeding to the Mother

- There is increasing evidence of long-term benefits from breastfeeding to mother as well.
- Reduced risk of maternal post partum haemorrhage-In the first few days after the binh, increased release of prolactin and oxytocin, help the uterus to return to its normal size more quickly, thus reducing the risk of serious haemorrhage in postpartum period.
- Breastfeeding increases the period of lactational amenorrhoea after delivery, which in tunn helps postpone the next pregnancy. This also helps to protect mother against anaemia by conserving iron.
- Reduction in the incidence of pre-menopausal breast cancer and some forms of oviuian cancer. Lower incidence of hip fractures in women over the age of 65.
- Helps mother to lose weight naturally (Fat stored during pregnancy used for breast milk energy.
- Breastfeeding helps a mother and baby to form a close, loving relationship, which makes mother feel deeply satisfied emotionally.

Other Benefits

- Breast milk is cheap and there is no waste.
- It is always at the correct temperature.
- It is ready when needed and requires no preparation.

Changes in the Composition of Breast Milk

Breast milk composition changes between: Fore milk and hind milk Colostrum and natural milk. Pre-term and term gestation. For the first few days, (3-4 days) after delivery, the breast secretes colostrum. Thereafter, it gradually changes into mature milk over a period of 10-15 days.

Colostrum: Colostrum is thick viscous yellowish fluid. It is secreted in small amounts (as little as 5-10 ml) but is enough for a normal baby and is exactly what a baby needs for the first few days. Colostrum is especially rich in proteins, particularly immuno-globulins IgM, IgG and secretory IgA and other anti-infective proteins. These protect the newborn from infections; especially those to which mother has been previously exposed and has become immune. In fact, it provides the first immunization to the babies. The antibodies present in colostrum also help to prevent a baby from developing allergies by decreasing enterohepatic circulation. Colostrum has a mild purgative effect, which helps to clean the baby's gut of meconium and thereby preventing the re-absorption of bilirubin and thereby reducing serum bilirubin levels. Colostrum contains growth factors, which help a baby's immature intestine to develop after birth. This helps to prevent the baby from developing allergies and intolerance to other foods. Colostrum is richer than mature milk in some vitamins-especially Vitamin A which helps to reduce severity of any infections the baby might have. Babies should not be given any drinks or foods before they start breastfeeding. Artificial feeds (prelacteals) given before a baby has colostrum are especially dangerous.In some communities, it is the custom not to let the baby have colostrum. Health personnel should discuss the protective value of colostrum with people and encourage them to change this practice.

Mature Milk: During the next 10-15 days, the milk increases in quantity and changes in appearance and composition. Major constituents of mature milk are fat, protein, carbohydrates, water, vitamins, minerals as well as hormones, enzymes, growth factors, imunological properties and protective factors. Mature milk looks thinner than cow's milk that makes some mothers think that their milk is too thin. You may need to reassure mothers that watery appearance is normal. The baby gets all the water that he needs from breast milk, even in very hot weather.

Fore Milk and Hind Milk: The composition of milk changes during a feed.

Fore Milk: comes at the beginning of a feed. It looks bluish and watery. It is rich in protein, lactose. vitamins. minerals and water.

Hind milk: comes at the end of a feed. It looks whiter than fore milk, because it contains more fat. The fat makes the hind milk rich in energy and supplies more than half the energy in brea:;t milk and satisfies the hunger of the baby. A baby needs both the fore milk and the hind milk for proper growth and development.If baby recieves feeds for shorter duration he will get only fore milk and therefore will feel hungry at short intervals as his energy demands are not met with.

Pre-term: Milk Pre-tenn milk contains more protein than full-term milk. Much of the extra proteins consist of anti-infective proteins. To grow well, pre-term babies need milk with more protein than full-tenn babies. Pre-term babies also need extra protection from infection.

Terms for Infant Feeding:

Exclusive breastfeeding means giving a baby no other food or drink (including water) besides breast milk (except medicine or vitamins and mineral drops and expressed breast In&).

predominant breastfeeding means breastfeeding a baby, but also giving small amounts of water or water-based drinks-such as, tea.

Bottle-jeeding means feeding a baby from bottle, whatever is in the bottle, including breast milk

Artificial feeding means feeding a baby on artificial feeds, and not breastfeeding at all.

Partial breastfeeding means giving a baby some breastfeeds, and some artificial feeds, either milk or cereal, or other food.

Recommendations for Infant Feeding:

Babies should start to breastfeed within 1/2 -1hour of birth. They should not have any food or drink before they start to breastfeed. Babies should be exclusively breastfed for first six months of life. All children should get complementary food (semi-solids) along with breastfeeding after the age of 6 months.