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# The miracles of mother's milk

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The high nutritious value of mother's milk is all that a baby needs to grow, and is a source of immunity against a great number of diseases. So why do some mothers give their babies formula milk?

**I**T GOES without saying that breast milk, also sometimes referred to as white blood, has numerous benefits for the baby. This milk, an unstructured living tissue, is almost similar to blood and has got the property of transporting nutrients, affecting biochemical systems, enhancing immunity and destroying pathogens.

Not just in human beings but in all mammals, suckling is the natural and commonest method of feeding young ones. Breast milk protects newborns from a wide range of diseases, the list of which is ever increasing as we are getting more and more insight into human health. Nature has equipped every woman with a wonderful way of caring for her baby, and breast-feeding is a natural and universal way of infant feeding for the first four to six months of life. Breast milk has all the vitamins, proteins, growth factors and everything else that a baby needs, in just the right quantities. Breast-feeding is more than a lifestyle choice with profound implications on health and well-being of the child.

With the introduction of powdered milk, many mothers prefer giving this to their babies instead of their own milk. As no other form of milk can be an ideal substitute for breast milk, children who are given formula milk tend to be weaker and not as healthy as those who are breast-fed.

In last few decades, researchers have discovered

happen if we substitute human blood with cow's blood for transfusion! Human milk contains the nutritional and anti-infective requirements of human infants to achieve their optimal growth, development and survival. Human infants take about four to six months to become double their birth weight, which is different from other mammals whose birth weight doubles much more rapidly. Heart diseases (including coronary artery disease) are less frequent among breast-fed infants.

Breast milk has life-sustaining properties by enhancing immunity and destroying pathogens. It prevents infection and shortens the duration of illnesses due to the presence of secretory IGA, macrophages, lactoferrin lysozyme, bifidus factor and anti-viral factors. Short chain fatty acids in breast milk have high acetic acid which act against envelop viruses, bacteria and fungi.

It has been observed that thymus gland (a lymphoid tissue playing important role in development of the immune system) double in size at four months of age in breast-fed infants as compared to formula-fed. Implications of this observation is a subject of extensive research.

Breast milk provides optimal nutrition for a baby. Its properties and composition change according to age and developmental needs of the baby. Its overall functional properties remains uniform around the world, varying within a narrow range. The total amount of fat in human milk is not affected by the amount of fat ingested by the mother. Fat content of human milk provides about

one half of the milk calories. Lipid fraction provides essential fatty acids, which are important for optimum growth of the infant's brain. It contains a wide range of long chain polyunsaturated fatty acids, one of these, named DHA, enhances the visual system. Commercial formula does not contain any DHA.

Most of the carbohydrate in breast milk is in the form of lactose, which after metaboliz-

dominating in human milk is easily digested, supplying continuous energy to the baby in contrast to less digestible casein which is the 'main bovine protein in formula milk. All ten essential amino acids are also present in colostrum (the milk that is produced during the first few days following delivery).

One and a half million infants around the globe die annually from diseases related to drinking formula milk. Among the long list of diseases against which breast milk provides protection during infancy and childhood, the foremost ones include respiratory tract infections, gastroenteritis and otitis media.

Breast-feeding has a protective effect against respiratory illness. Even if breast-fed infants develop respiratory infection, it is usually of the upper respiratory tract and they are much less likely to develop pneumonia and to be hospitalized.

Persistent diarrhoea and slow weight gain is significantly lower in breast-fed infants than in those not breast-fed.

Acute diarrhoea is still a cause of hospitalization and death in infants and young children in many countries. There is protection from rotavirus diarrhoea in breast-fed infants between 7-12 months. Due to better absorption of breast milk, infants with gastroenteritis still can take and digest breast milk. Otitis media (inflammation of middle ear) is the second most prevalent childhood disease. Bottle-feeding increases its risk and duration.

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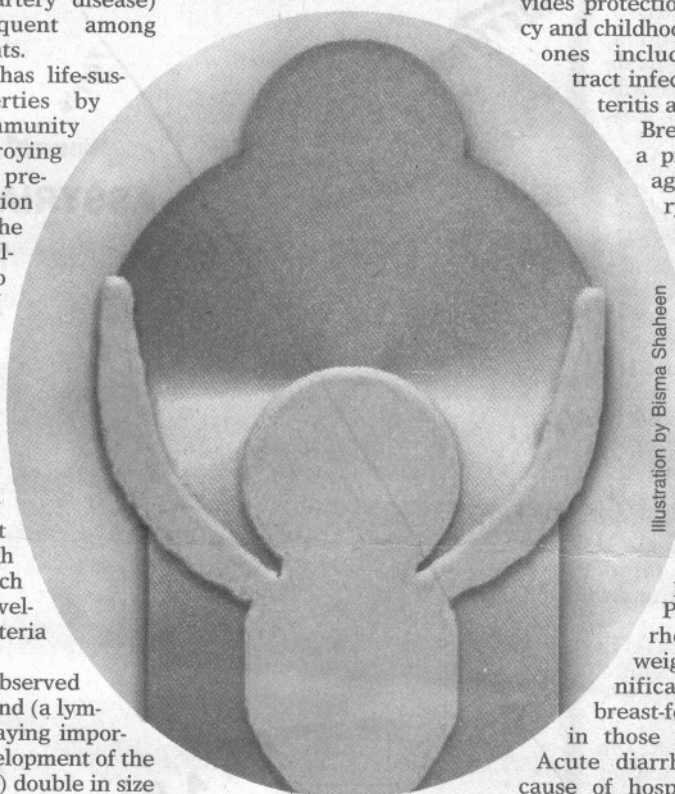


Illustration by Bisma Shaheen

ing into glucose and galactose, supply energy to the rapidly growing brain of the infant. Besides increasing calcium absorption, it also promotes growth of lactobacillus bifidus (normal commensal flora of intestine) which keeps a check on the growth of intestinal pathogens.

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In last few decades, researchers have discovered and identified specific anti-infective components of human milk that make it a peerless substance for human infants. It is viewed as a living tissue and rightly so. This white blood is rich in enzymes, immunoglobulins and leukocytes, which accounts for most of the anti-infective properties. It is a common and standard practice to use it for healing of sore nipples. In some cultures it is used as drops for sticky eyes.

Breast milk is species-specific. As cow feeds her milk to calf and it is most suitable for it, in the same way, the human mother's milk is the best for human infants. Feeding cow's milk to human babies is not suitable — imagine what will

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## WHO's Breast Milk Substitute Code

IN 1981, the World Health Assembly adopted The International Code of Marketing of Breast Milk Substitutes, as a tool to protect breast-feeding. The Innocenti Declaration of 1990 calls on all governments to implement the code by 1995.

The marketing plans of formula milk targets women. The Code prohibits marketing of these products. It covers formula, other milk products, cereals, teas and juices as well as bottles and teats.

The Code has 10 important provisions

1. No advertising of any of these products to the public.
2. No free samples to mothers.
3. No promotion of products in healthcare facilities, including the distribution of free or low cost supplies.
4. No company sales representatives to

advise mothers.

5. No gifts or personal samples to health workers.

6. No words or pictures idealizing artificial feeding, or pictures of infants on labels of infant milk containers.

7. Information to health workers should be scientific and factual.

8. All information on artificial infant feeding, including that on labels, should explain the benefits of breast-feeding and the cost and hazards associated with artificial feeding.

9. Unsuitable products, such as sweetened condensed milk, should not be promoted for babies.

10. Manufacturers and distributors should comply with the Code's provisions even if countries have not adopted laws or other measures.

**People:**

- Supportive friend or relative
- Nurses in hospitals
- Breast-feeding clinics
- Your doctor/paediatrician

**Website related to breastfeeding:**

- Breast-feeding.com — <http://www.breastfeeding.com>
- IBFAN — <http://www.gn.abc.org/ibfan>
- INFACt Canada — <http://www.infactcanada.ca>
- La Leche League International — <http://www.lalecheleague.org>
- Baby milk action, UK — [http://www.gn.apc.org/baby\\_milk](http://www.gn.apc.org/baby_milk)
- World alliance for breast-feeding action (WABA) — <http://www.waba.org.br/>
- Breast-feeding topics of the month — [www.bftopics.org](http://www.bftopics.org)

nile diabetes, allergies and coronary artery diseases. Asthma and all other types of allergies are continuously rising due to constant stress on immune system due to increasing amount of chemicals in air, food and water, early weaning and early introduction of solid foods to infants and genetic manipulation of plants.

It has been noted that asthma and skin allergies that originate during infancy are generally food allergies. In cases where there is a family history of allergy, mothers are advised to breast-feed the babies for at least nine months and to delay the introduction of solid foods to prevent allergies in infants. The risk of sensitization to allergic protein (cow's milk protein in manufactured infant formula) is so high that even occasional use of formula preparation may trigger the allergic reaction.

Symptoms of allergy to cow's milk appear during the first few months of life. It may manifest in variety of ways, like vomiting, diarrhoea, colic, running nose, asthma, cough, dermatitis, urticaria (skin rashes) and eczema. When introduction of foreign proteins (formula milk) is avoided for the first six months, the infant's immune system becomes fully functional and allergic responses may be diminished or delayed.

Breast-feeding also protects them against SIDS (Sudden Infant Death Syndrome) due to nutritional, immunological and psychological benefits. Immunization may be less effective in artificially-fed infants because manufactured milk do not enhance the immune system.

When a baby is breast-fed

the expense of buying formula milk is not only spared, but a lot of money is also saved on medical expenses as such babies tend to fall sick less. Breast-feeding is environment friendly. All over the world, an enormous quantity of water, gas, electricity and wood is wasted in preparing powdered milk and sterilizing bottles. Even when the manufacture and preparation of formulas are flawless, they cannot match the biological superiority of human milk for human infants.

The precious resource of breast milk should be promoted, protected and supported by governments, communities, health care professionals, families and women themselves. ■