

**Vol. XIV**  
**Number 1**

**ISSN 2319-7129**

**Jan.-Feb. 2018 (Special Issue)**



# **EDU WORLD**

**A Peer Reviewed/Refereed Journal of  
Education and Management**

**APH PUBLISHING CORPORATION**

# CONTENTS

Current Technology Trends in Libraries <i>Dr. Priya Pillai and Dr. Vandana Shelar</i>	1
Effects of Income Tax Changes on Economic Growth: A Compare Study <i>Rubeena Kottuthody</i>	5
Credit Card System & Its Uses- A Study Related on Credit Card and Its Major Impact on Economy <i>Usman M</i>	12
Impact of Globalization and Privatization on Higher Education in India <i>Simardeep Kaur</i>	19
Role of Libraries in Distance Education <i>Simardeep Kaur</i>	22
E-Publishing: Changing Information Environment <i>Simardeep Kaur</i>	27
ICT and Academic Libraries <i>Simardeep Kaur</i>	32
Digital Libraries Development in the 21st Century with Reference to India <i>Simardeep Kaur</i>	37
Breast Milk : Best Health Option for Babies <i>Dr. Sarojini Jamadagni</i>	44
A Study on Total Quality Management of Colleges of Education in Karnataka <i>Dr. Divakara Naik K S.</i>	50
A Study of Self - Concept of Intermediate Students <i>Dr. Cherukuri Narayanamma</i>	56
Functions of Rhythm in English Poetry <i>Sirisha Domathoti</i>	61
A Study of Environmental Education Competencies of Teacher Trainees <i>Dr. Pakala Naga Suresh Kumar and Dr. T. Swaruapa Rani</i>	64
Laws Safeguarding Women and Children Against Crimes in India <i>Anisha Kar</i>	71

# Breast Milk : Best Health Option for Babies

Dr. Sarojini Jamadagni\*

**Breast Milk is best. Nothing that money can buy is as good for a baby as breastfeeding**  
**Breastfeeding** (or nursing) is the feeding of an **infant** or young **child** with **breast milk** directly from human **breasts** rather than from a **baby bottle** or other container. Babies have a **sucking reflex** that enables them to suck and swallow milk. Most mothers can breastfeed for six months or more, without the addition of **infant formula** or solid food.

Human **breast milk** is the most healthful form of milk for human babies. There are few **exceptions**, such as when the mother is taking certain **drugs** or is infected with **tuberculosis** or **HIV**. Breastfeeding promotes health, helps to prevent disease and reduces health care and feeding costs. In both **developing** and **developed countries**, artificial feeding is associated with more deaths from **diarrhoea** in infants.<sup>[4]</sup> Experts agree that breastfeeding is beneficial, but may disagree about the length of breastfeeding that is most beneficial, and about the risks of using artificial formulas.

Both the **World Health Organization** (WHO) and the **American Academy of Pediatrics** (AAP) recommend exclusive breastfeeding for the first six months of life and then breastfeeding up to two years or more (WHO) or at least one year of breastfeeding in total (AAP). Exclusive breastfeeding for the first six months of life "provides continuing protection against diarrhea and respiratory tract infection" that is more common in babies fed formula. The WHO and AAP both stress the value of breastfeeding for mothers and children. While recognizing the superiority of breastfeeding, regulating authorities also work to minimize the risks of artificial feeding.

According to a WHO 2001 report-alternatives to breastfeeding include:

- expressed breast milk from an infant's own **mother**
- breast milk from a healthy **wet-nurse** or a human-milk bank
- a **breast-milk substitute** fed with a cup, which is a safer method than a **feeding bottle and teat**.

The acceptability of **Breastfeeding in public** varies by culture and country. In **Western culture**, though most approve of breastfeeding, some mothers may be reluctant to do so out of fear of public opinion

## BREASTFEEDING - THE FIRST 6 MONTHS OF LIFE

Increasing optimal breastfeeding practices could save an estimated 1.5 million infant lives annually. Up to 55 percent of infant deaths from diarrheal disease and acute respiratory infections may result from inappropriate feeding practices. Optimal feeding for sustained child health and growth includes initiation of breastfeeding within the first hour of life, exclusive breastfeeding for six months, timely complementary feeding with appropriate foods, and continued breastfeeding for two years and beyond.

During the first 6 months of life, infants should be *exclusively* breastfed. This means that the healthy baby should receive breastmilk and *no other fluids*, such as water, teas, juice, cereal drinks, animal milk or formula. Exclusively breastfed babies are much less likely to get diarrhoea or to die from it than are babies who are not breastfed or are partially breastfed. Breastfeeding also protects against the risk of allergy early in life, aids in child spacing and provides protection against infections

---

\*Assistant Professor, Department of Home Science, S.N.R.L. Jairam Girls College, Lohar Majra, Kurukshetra (Haryana).

other than diarrhoea (e.g. pneumonia). Breastfeeding should be continued until at least 2 years of age. The best way to establish the practice is to put the baby to the breast immediately after birth and not to give any other fluids.

Advantages and Benefits of breastfeeding are listed below. Some or all of them may be explained to mothers using simple language.

If breastfeeding is not possible, cow's milk or milk formula should be given from a cup. This is possible even with very young infants. Feeding bottles and teats should *never* be used because they are very difficult to clean and easily carry the organisms that cause diarrhoea. Careful instructions should be given on the correct preparation of milk formula using water that has been boiled briefly before use.

## ADVANTAGES AND BENEFITS OF BREASTFEEDING

1. **Saves Lives.** Currently there are 9 million infant deaths a year. Breastfeeding saves an estimated 6 million additional deaths from infectious disease alone.
2. **Provides Initial Immunization.** Breastmilk, especially the first milk (colostrum), contains anti-bacterial and anti-viral agents that protect the infant against disease, especially diarrhoea. These are not present in animal milk or formula. Breastmilk also aids the development of the infant's own immune system.
3. **Prevents Diarrhoea / Diarrhea.** Diarrhoea is the leading cause of death among infants in developing countries. Infants under two months of age who are not breastfed are 25 times as likely to die of diarrhea than infants exclusively breastfed. Continued breastfeeding during diarrhea reduces dehydration, severity, duration, and negative nutritional consequences of diarrhea.
4. **Provides Complete and Perfect Nutrition.** Breastmilk is a perfect food that cannot be duplicated. It is more easily digested than any substitute, and it actually alters in composition to meet the changing nutritional needs of the growing infant. It provides *all* the nutrients and water needed by a healthy infant during the first 6 months of life. Formula or cow's milk may be too dilute (which reduces its nutritional value) or too concentrated (so that it does not provide enough water), and the proportions of different nutrients are not ideal.
5. **Maximizes a Child's Physical and Intellectual Potential.** Malnutrition among infants up to six months of age can be virtually eradicated by the practice of exclusive breastfeeding. For young children beyond six months, breastmilk serves as the nutritional foundation to promote continued healthful growth. Premature infants fed breastmilk show higher developmental scores as toddlers and higher IQs as children than those not fed breastmilk.
6. **Promotes the Recovery of the Sick Child.** Breastfeeding provides a nutritious, easily digestible food when a sick child loses appetite for other foods. When a child is ill or has diarrhea, breastfeeding helps prevent dehydration. Frequent breastfeeding also diminishes the risk of malnutrition and fosters catch-up growth following illness.
7. **Supports Food Security.** Breastmilk provides total food security for an infant's first six months. It maximizes food resources, both because it is naturally renewing, and because food that would otherwise be fed to an infant can be given to others. A mother's milk supply adjusts to demand; only extremely malnourished mothers have a reduced capacity to breastfeed.
8. **Bonds Mother and Child.** Breastfeeding immediately after delivery encourages the "bonding" of the mother to her infant, which has important emotional benefits for both and helps to secure the child's place within the family. Breastfeeding provides physiological and psychological benefits for both mother and child. It creates emotional bonds, and has been known to reduce rates of infant abandonment.

9. **Helps Birth Spacing.** In developing countries, exclusive breastfeeding reduces total potential fertility as much as all other modern contraceptive methods combined. Mothers who breastfeed usually have a longer period of infertility after giving birth than do mothers who do not breastfeed.
10. **Benefits Maternal Health.** Breastfeeding reduces the mother's risk of fatal postpartum hemorrhage, the risk of breast and ovarian cancer, and of anemia. By spacing births, breastfeeding allows the mother to recuperate before she conceives again.
11. **Saves Money.** Breastfeeding is among the most cost-effective of child survival interventions. Households save money; and institutions economize by reducing the need for bottles and formulas. By shortening mothers' hospital stay, nations save foreign exchange. There are none of the expenses associated with feeding breastmilk substitutes (e.g. the costs of fuel, utensils, and special formulas, and of the mother's time in formula preparation).
12. **Is Environment-friendly.** Breastfeeding does not waste scarce resources or create pollution. Breastmilk is a naturally-renewable resource that requires no packaging, shipping, or disposal.
13. **Breastfeeding is Clean.** It does not require the use of bottles, nipples, water and formula which are easily contaminated with bacteria that can cause diarrhoea.
14. **Milk intolerance is very rare** in infants who take only breastmilk.

## Breast milk

Not all the properties of **breast milk** are understood, but its **nutrient** content is relatively stable. Breast milk is made from nutrients in the mother's bloodstream and bodily stores. Because breastfeeding uses an average of 500 calories a day it helps the mother lose weight after giving birth. The composition of breast milk changes depending on how long the baby nurses at each session, as well as on the age of the child.

Research shows that the milk and energy content of breastmilk actually decreases after the first year. Breastmilk adapts to a toddler's developing system, providing exactly the right amount of nutrition at exactly the right time. In fact, research shows that between the ages of 12 and 24 months, 448 milliliters of human milk provide these percentages of the following minimum daily requirement

Energy:	29%
Folate:	76%%
Protein:	43%
Vitamin B12:	94%
Calcium:	36%
Vitamin C:	60%
Vitamin A:	75%

The quality of a mother's breast milk may be compromised by stress, bad food habits, chronic illnesses, smoking, and drinking.

## Infant weight gain

Breastfed infants generally gain weight according to the following guidelines:

- 0–4 months: 170 grams per week†
- 4–6 months: 113–142 grams per week
- 6–12 months: 57–113 grams per week

It is acceptable for some babies to gain 113–142 grams (4–5 ounces) per week. This average is taken from the lowest weight, not the birth weight.

The average breastfed baby doubles its birth weight in 5–6 months. By one year, a typical breastfed baby will weigh about 2½ times its birth weight. At one year, breastfed babies tend to be leaner than bottle fed babies. By two years, differences in weight gain and growth between breastfed and formula-fed babies are no longer evident.

## BENEFITS FOR MOTHERS

Breastfeeding is a cost effective way of feeding an infant, and provides the best nourishment for a child at a small nutrient cost to the mother. Frequent and exclusive breastfeeding can delay the return of fertility through **lactational amenorrhea**, though breastfeeding is an imperfect means of **birth control**. During breastfeeding beneficial **hormones** are released into the mother's body and the maternal bond can be strengthened. Breastfeeding is possible throughout **pregnancy**, but generally milk production will be reduced at some point.

## LONG-TERM HEALTH EFFECTS

A recent study indicates long duration of lactation (at least 24 months) is associated with a reduced risk of heart disease in women.<sup>1</sup> Breastfeeding mothers also have less risk of **endometrial** and **ovarian cancer** and **osteoporosis**,<sup>[17][10]</sup> and breast cancer.

Mothers who breastfeed longer than eight months also benefit from bone re-mineralisation and breastfeeding **diabetic** mothers require less insulin.<sup>1</sup> Breastfeeding helps stabilize maternal **endometriosis** reduces the risk of post-partum **bleeding** and benefits the **insulin** levels for mothers with **polycystic ovary syndrome**.

Women who breast feed for longer have less chance of getting rheumatoid arthritis, a Malmö University study published online ahead of print in the *Annals of the Rheumatic Diseases* suggested (See **Women Who Breast Feed for More than a Year Halve Their Risk of Rheumatoid Arthritis**). The study also found that taking oral contraceptives, which are suspected to protect against the disease because they contain hormones that are raised in pregnancy, did not have the same effect. Simply having children but not breast feeding also did not seem to be protective.

## BONDING

The hormones released during breastfeeding strengthen the **maternal bond**. Teaching partners how to manage common difficulties is associated with higher breastfeeding rates. Support for a mother, while breastfeeding can assist in **familial bonds** and help build a **paternal bond** between father and child.

If the mother is away, an alternative caregiver may be able to feed the baby with expressed breast milk. The various **breast pumps** available for sale and rent help working mothers to feed their babies breast milk for as long as they want. To be successful, the mother must produce and store enough milk to feed the child for the time she is away, and the feeding caregiver must be comfortable in handling breast milk.

## Hormone release

Breastfeeding releases **oxytocin** and **prolactin**, hormones that relax the mother and make her feel more nurturing toward her baby. Breastfeeding soon after giving birth increases the mother's oxytocin levels, making her uterus contract more quickly and reducing bleeding. Oxytocin is similar to pitocin, a synthetic hormone used to make the uterus contract.

## Weight loss

As the fat accumulated during pregnancy is used to produce milk, extended breastfeeding—at least 6 months—can help mothers lose weight. However, weight loss is highly variable among lactating women, and diet and exercise are more reliable ways of losing weight.

## Natural postpartum infertility

A breastfeeding woman may not **ovulate**, or have regular periods, during the entire lactation period. The period in which ovulation is absent differs for each woman. This **Lactational amenorrhea** has been used as an imperfect form of natural contraception, with a greater than 98% effectiveness during the first six months after birth if specific nursing behaviors are followed. It is possible for some women to ovulate within two months after birth while fully breastfeeding.

## BREASTFEEDING DIFFICULTIES

While breastfeeding is a natural human activity, difficulties are not uncommon. Putting the baby to the breast as soon as possible after the birth helps to avoid many problems. The AAP breastfeeding policy says: *Delay weighing, measuring, bathing, needle-sticks, and eye prophylaxis until after the first feeding is completed.* Many breastfeeding difficulties can be resolved with proper hospital procedures, properly trained midwives, doctors and hospital staff, and lactation consultants—There are some situations in which breastfeeding may be harmful to the infant, including infection with **HIV** and acute poisoning by environmental contaminants such as lead. Rarely, a mother may not be able to produce breastmilk because of a prolactin deficiency. This may be caused by Sheehan's syndrome, an uncommon result of a sudden drop in blood pressure during childbirth typically due to hemorrhaging. In developed countries, many working mothers do not breast feed their children due to work pressures. For example, a mother may need to schedule for frequent pumping breaks, and find a clean, private and quiet place at work for pumping. These inconveniences may cause mothers to give up on breast feeding and use infant formula instead.

## CONCLUSION

Both the **World Health Organization (WHO)** and the **American Academy of Pediatrics (AAP)** recommend exclusive breastfeeding for the first six months of life and then breastfeeding up to two years or more (WHO) or at least one year of breastfeeding in total (AAP). Exclusive breastfeeding for the first six months of life "provides continuing protection against diarrhea and respiratory tract infection" that is more common in babies fed formula. The WHO-and AAP-both stress the value of breastfeeding for mothers and children. While recognizing the superiority of breastfeeding, regulating authorities also work to minimize the risks of artificial feeding.

[the] vast majority of mothers can and should breastfeed, just as vast majority of infants can and should be breastfed. Only under exceptional circumstances can a mother's milk be considered as unsuitable for her infant. For those few health situations where infants cannot, or should not, be breastfed, the choice of the best alternative - expressed milk from the infant's own mother, breast milk from a healthy wet-nurse or a human-milk bank, or a breast milk substitute fed with a cup, which is a safer method than a feeding bottle or a teat - depends on individual circumstances.

## REFERENCES

- 1 **Nursing** article, dealing with the **healthcare professional** concept.
2. Picciano M (2001). "Nutrient composition of human milk". *Pediatr Clin North Am* **48** (1): 53–67. doi:10.1016/S0031-3955(05)70285-6. PMID 11236733.
3. Riordan JM (1997). "The cost of not breastfeeding: a commentary". *J Hum Lact* **13** (2): 93–97. doi:10.1177/089033449701300202. PMID 9233193.
4. Horton S, Sanghvi T, Phillips M, *et al* (1996). "Breastfeeding promotion and priority setting in health". *Health Policy Plan* **11** (2): 156–68. doi:10.1093/heapol/11.2.156. PMID 10158457.
5. Kramer M, Kakuma R (2002). "Optimal duration of exclusive breastfeeding". *Cochrane Database Syst Rev*. CD003517. doi:10.1002/14651858.CD003517.
6. Baker R (2003). "Human milk substitutes. An American perspective". *Minerva Pediatr* **55** (3): 195–207. PMID 12900706.
7. Agostoni C, Haschke F (2003). "Infant formulas. Recent developments and new issues". *Minerva Pediatr* **55** (3): 181–94. PMID 12900705.
8. "Breastfeeding and the Use of Human Milk - AAP policy statement". February 2005. <http://aappolicy.aappublications.org/cgi/content/full/pediatrics;115/2/496>. Retrieved on 2008-08-08.
9. "Exclusive Breastfeeding". *WHO: Child and Adolescent Health and Development: Breastfeeding*. [http://www.who.int/child\\_adolescent\\_health/topics/prevention\\_care/child/nutrition/breastfeeding/en/index.html](http://www.who.int/child_adolescent_health/topics/prevention_care/child/nutrition/breastfeeding/en/index.html). Retrieved on 2008-09-22.
10. Gartner LM, *et al* (2005). "Breastfeeding and the use of human milk". *Pediatrics* **115** (2): 496–506. doi:10.1542/peds.2004-2491. PMID 15687461. <http://aappolicy.aappublications.org/cgi/content/full/pediatrics;115/2/496>.
11. Secretariat, World Health Organization (2001-11-24). "Infant and Young Child Nutrition: Global strategy for infant and young child feeding" (PDF)., World Health Organization. WHO Executive Board 109th Session provisional agenda item 3.8 (EB109/12).
12. Dewey KG, Heinig MJ, Nommmwen LA. Maternal weight-loss patterns during the menstrual cycle. *Am J Clin Nutr* 1993;58: 162-166