

## Breast Milk for Preterm is luxury or Necessity

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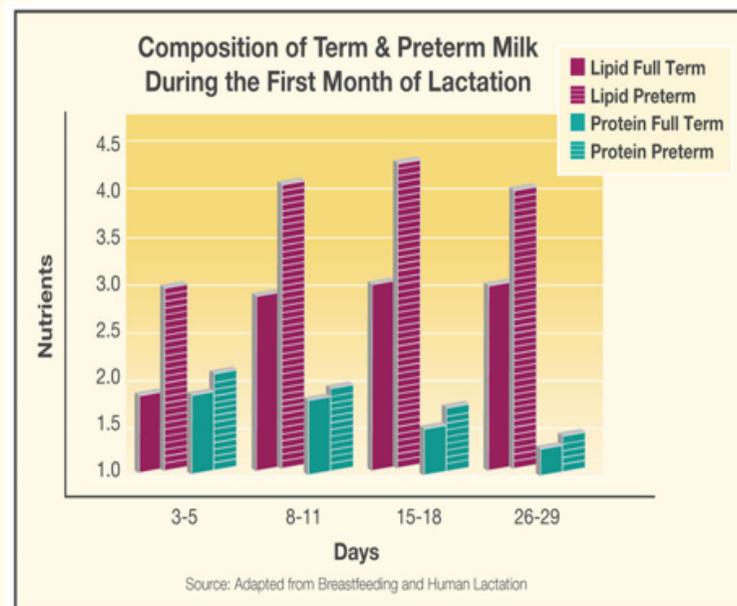
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### Abstract

Feeding human milk to preterm babies has a number of important short and long term health outcomes. There are a lot of studies showed that breast milk is protective against several prematurity related health condition.

**Keyword:** Breast Milk

Breast feeding is the preferred form of feeding for all infants. The use of breast milk in NICU have resulted in increase the survival rate of extreme preterm babies.



**Figure 1**

### Breast milk for preterm is luxury or necessity?

Human milk as a “medicine” that only the mother can provide.

Human milk from the infant’s mother cannot be replaced by commercial infant formula. “Breast is best” for them even compared with giving babies breast milk out of the bottle, according to a Canadian study published recently.

Human milk from women delivering prematurely has more protein and higher levels of many bioactive molecules compared to milk from women delivering at term.

Research by Bauer and Gerstl in 2011 showed that amount of fat, carbohydrate and proteins are significantly higher in the premature milk and these differences continued up to 8 weeks postpartum.

### Breast milk for preterm babies reduces the risk of the following:

1. Enteral feeding intolerance.
2. Necrotizing enterocolitis (NEC)
3. Neonatal sepsis.
4. Chronic lung disease, Libster and colleagues in 2009 found girls being more protected from severe lung disease.
5. Decrease hospital length of stay.
6. Retinopathy of prematurity (ROP) for the presence of very long chain polyunsaturated fatty acid. Some studies compared those fed formula, and exclusive or mainly human milk feeding and it showed significant reduction of severe ROP in human milk group, risk of developing any-stage ROP was 0.29 (95% confidence interval [CI], 0.12 - 0.72) compared with infants fed any formula (Zhou and colleagues from the Children’s Hospital of Fudan University, China).

The underlying physiologic mechanism through which breast milk may protect against the development of ROP may reflect the antioxidant and immunoprotective properties of human milk.

7. Developmental and neurocognitive delay.

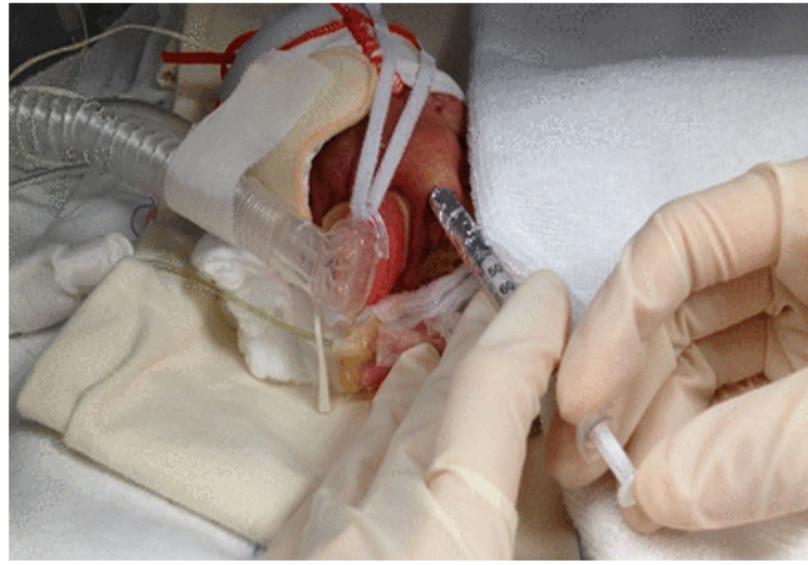
Recently, stem cells have been discovered in human milk and maybe this contributed to faster brain development and higher IQ. According to one study was done in NICU at Lois children’s hospital, the researchers found those preterm babies who received mainly breast milk during the first month of age they have larger brain by brain MRI and this may explain the relation between breast milk and good cognitive development, but further researches and studies are needed.

8. Rehospitalization after NICU discharge.

Each 10 mL/kg/d of human milk received over the NICU stay was associated with a dose-response reduced risk of rehospitalization during the first year of life.

### Colostrum use in the NICU

1. Can be used as trophic feeding and this reduce the time to full enteral feeding.
2. As oral immune therapy by placing small amount of mother’s own colostrum 0.2 ml directly to the buccal mucosa by 1 ml sterile syringe even if the patient is ventilated during first 48 hour of age, well tolerated by small sick preterm babies, does not need swallowing, the immune components will be absorbed by the mucus membranes and has been shown to modulate the immature immune system. The immune components in colostrum like secretory IgA, cytokines, lactoferrin and oligosaccharide will be absorbed by lymphoid tissues (oropharyngeal, gut and bronchial associated lymphoid tissue) oropharyngeal colostrum has been shown to reduce the rate of clinical sepsis and protective against ventilator associated pneumonia (VAP). The avoidance of commercial formula may be most important during the use of colostrum.



**Figure 2**

**Current recommendations for lactation and breastfeeding promotion and support in the NICU include:**

- Policy: A written policy is developed by a multi-disciplinary team and communicated to all NICU personnel and families.
- Guidelines: for collecting and storing breast milk.
- Specific staff training, information about the benefits and challenges of provision of mother’s milk and breastfeeding
- Avoiding mother-infant separation as possible as you can.
- Promoting skin-to-skin care.
- Encouraging the use of bottle substitutes like syringe or dropper or OGT feeding at the breast to enhance milk production and improve the sucking reflex.
- Helping mothers to initiate milk expression soon after birth, and facilitating access to breast pumps, early initiation of pumping within 6 hours of delivery is associated with lactation continuing after the infant reaches 40 weeks corrected age (Furman, Minich and Hack, 2002), pump milk frequently is important to optimizing the amount of milk.
- Parents education: Educate the parents regarding the therapeutic effects of breast milk on their infants.

**Conclusion**

The protective effects of human milk on the premature babies contributed to improvement of the outcome of this highly vulnerable population for that, Neonatal services should commit the resources needed to optimise the use of breastmilk and human milk should be a NICU priority.

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