

THE VALUE OF HUMAN MILK ACCESS FOR PREMATURE INFANTS

By Mitchell Goldstein, MD



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Babies thrive on a diet of human milk, as peer-reviewed research in recent decades has demonstrated. Moreover, breastfeeding and human milk have proven to reduce respiratory complications, gastrointestinal infections, sudden infant death syndrome, and a number of other serious morbidities. In cases where

mothers cannot breastfeed or produce sufficient breastmilk, bottle-fed human milk from the mother or other donors offers comparable benefits.

The most vulnerable infants, those born prematurely with a birth weight less than or equal to 1,250 grams, have a demonstrated need for an exclusive human milk diet. Research has established a strong dose-response relationship between human milk diets and the discharge rates as well as morbidities of pre-term infants. A diet of human milk reduces the number of total parenteral nutrition (intravenous feeding) days, incidences of sepsis, the frequency of surgery and mortality rates in pre-term infants.

Yet, despite these clear benefits, families may face limited options due to lack of insurance coverage for human milk and human milk-based fortifiers, and other access challenges including lack of an affordable breast pump.

MILK AS MEDICINE

Human milk has proven particularly effective in reducing a baby's risk of necrotizing enterocolitis (NEC), a condition

in which the intestinal tissue is damaged sometimes beyond repair, with associated abdominal distention, temperature instability and shock. NEC occurs most often in premature or sick babies and is often life threatening. Treatment may require invasive surgeries and can have lifelong consequences.

Evidence shows a correlation between an exclusive human milk diet and lower mortality and morbidity as compared to a bovine or cow-based diet. Human milk isn't merely nutrition—it's medicine. An increasing number of healthcare professionals and hospitals now share this view.

An exclusive human milk diet provides tangible economic benefits.

Reductions in the instances of NEC alone reduce costs by \$7,508 per infant and cut

expected costs of surgical NEC by \$10,785 per infant. There are additional significant long-term cost implications when the cost of long-term total parenteral nutrition and post NICU surgeries are considered.

Nevertheless, existing informed consent procedure defies current data by requiring a mother to consent to an exclusive human milk diet for her baby. Scientific consensus, on the other hand, supports that hospitals should instead be obtaining informed consent from parents opting for a non-human milk diet.

How Does a Human Milk Diet Affect NEC?

With the help of a human milk-based diet fortified with human milk-based fortifier:

- NEC incidence is reduced by 77%
- For every 8 infants who receive an exclusive human milk diet, one case of NEC is prevented

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QUALITY AND SAFETY IN THE IDEAL HUMAN MILK DIET

Programs now exist to foster a hospital environment that encourages breastfeeding. One such program is the Baby-Friendly Hospital Initiative, an accreditation program for maternity facilities that encourages an optimal environment for appropriate infant feeding and mother-baby bonding. The program promotes quality and the maintenance of the milk supply in accredited institutions.

Premature infants benefit from an exclusive human milk-based diet. However, mother's milk alone is rarely enough for delicate pre-term infants. In fact, 72% of the mothers of premature infants are not able to provide the necessary calories, protein and other nutrients. Donor human milk, donor human milk with human-derived fortifier, and human milk cream appropriately supplement the diet in such cases. A multi-step process must protect infants by assuring the quality and safety of donor milk.

Human Milk Quality & Safety: Best Practices Checklist

- Preliminary screening of individuals wishing to donate.
- DNA fingerprinting using polymerase chain reaction on donor milk. Results must align with the final product to eliminate the possibility of contamination with non-donor milk sources.
- Milk tested for bacterial contamination just like any blood product.
- Nutritional analysis guarantees a minimum of 20 kilocalories per ounce.
- Final nutritional content held to same standard as prescription drugs.
- Truth in manufacturing. Full disclosure should be provided regarding the effect of various technological modifications of breast milk including homogenization and pasteurization that may impact the nutritional value of the milk.

As with the plasma industry, there is an inherent risk in not adequately screening and processing human milk products. DNA verification and blood product level testing is imperative. There is also the need for clinically evaluating human milk products in the same way that pharmaceutical or other biologic products are studied.

BARRIERS TO ACCESS

Despite the proven benefits of human milk and the increased availability of donor human milk, premature infants and their families often struggle to overcome significant barriers to access even if they are made aware of options to provide the best possible nutrition for the child.

Barrier #1: Access to Hospital-Grade Breast Pumps

Hospital-grade pumps for mothers at home facilitate the human milk diet, optimizing premature infant health. The personal pumps mothers often receive under their insurance coverage simply do not match the quality of hospital pumps. The consequence of health plans that fail to provide hospital-grade pumps is typically return hospitalizations for failure to thrive and other nutritional-related complications.

The Affordable Care Act has not solved this problem. In fact, it has made it worse in some cases because no minimum specifications exist for the breast pumps provided through insurance. Virtually any pump meets the law's standards. As a result, requirements for coverage are a patchwork of policies with few guidelines and no quality assurance.

Barrier #2: Insurance and Medicaid Coverage for Donor Milk

Donor milk represents a critical bridge if a mother has a delayed or inadequate supply of her own breastmilk. Establishing more donor milk banks in close proximity to hospitals is critical, especially because so few hospitals have the financing, space, or manpower to provide this life-saving resource within their own facility.

The upfront cost and availability of donor milk can bar access, but for every dollar spent on donor milk, \$11 in medical costs can be saved. Many informal donor milk networks have evolved, especially in the age of social media. This practice severely undermines quality and safety. Supplies procured online may not have been screened, processed or evaluated sufficiently. Appropriate donor milk coverage policies can free mothers from having to resort to potentially dangerous black market sources because of cost considerations.

An increasing number of insurance companies are paying for donor milk, or at least part of the cost (such as the fortifier). However, the number covering donor human milk in full is far from ideal. Insurers more often pay for donor milk under

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specific conditions, but standards vary. This causes confusion among preemie parents, who are already emotionally drained. The Medicaid statute does not address lactation services, so as with breast pump coverage, the level of donor human milk coverage varies widely by state.

Barrier #3: Lack of Adequate Safety Nets for Medicaid Recipients

Low-income families are often unprepared to handle the arrival of a premature child, a situation exacerbated by disparity. Hospitals can empower these parents by supplying data and helping them understand how an exclusive human milk-based diet benefits their baby.

CONCLUSIONS

An exclusive human milk-based diet improves premature babies' health and survival. The complications of NEC, feeding intolerance, and poor growth and development can be avoided. Public policy should reflect those benefits, but the Affordable Care Act and Medicaid statute do not address them in any meaningful way. Moreover, inconsistencies in coverage can confuse patients.

Specific barriers for mothers of premature infants include access to hospital-grade breast pumps, health plan coverage for donor human milk, and consistent, adequate Medicaid coverage that facilitates breastfeeding and supports a human milk diet.

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Even with education, however, parents sometimes simply cannot obtain the preferred diet due to holes in Medicaid coverage. This occurs when a mother is not able to be physically present or transport her milk to the NICU, or when accommodations for overnight stay are not provided in order to properly breastfeed her baby. Other children at home may also need attention, introducing prohibitive child care costs.

Moreover, low-income families seldom have benefits such as paid time off or maternity leave. The cost of an exclusive human milk diet can be quite expensive, impacting household finances severely because of lost income as a result of a mother deciding to stay home to breastfeed.

The existing informed consent procedure also fails to reflect the value of a human milk diet. Mothers must currently consent to an exclusive human milk diet, but few understand its importance. A more scientifically informed consent procedure should require mothers to opt out of an exclusive human milk diet for their babies.

In recognizing the importance of premature infants' health, policymakers must work together to ensure access to a human milk diet. Optimal nutrition for infants saves lives and improves the quality of these lives. Moreover, there is significant data for improvement in premature infant outcomes through the entire healthcare system and cost reduction over the long term.

ABOUT THE AUTHOR & THE INSTITUTE FOR PATIENT ACCESS

Mitchell Goldstein, MD, is an Associate Professor of Pediatrics at Loma Linda University Children's Hospital and emeritus medical director of the Neonatal Intensive Care Unit at Citrus Valley. Dr. Goldstein is board certified in both Pediatrics and Neonatal Perinatal Medicine. He serves as the medical director of the National Coalition for Infant Health.

Dr. Goldstein also serves in the positions of advisory board member and medical director for Prolacta Bioscience.

All potential sources of conflict have been managed. Dr. Goldstein receives no direct or indirect financial compensation from the National Coalition for Infant Health, the Institute for Patient Access, or Prolacta Bioscience.

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