

The Four Pillars of Safe Breast Milk Sharing

Shell Walker and Maria Armstrong



Introduction

Since 1991, I have fostered milk exchanges between many families within my community and it is not uncommon for folks to call on me if their baby has a need for donor milk. As an organic response to this interesting calling, I established Eats on Feets in July of 2010.

A lot has changed in my milk sharing consciousness since I was an earth child living with my friends under the towering cottonwood trees by the river. As Eats on Feets moved beyond my personal community, I was filled with endless questions: Is milk sharing really safe? Do families have access to the information that they need? Are babies being well served? Are we missing anything?

In November of 2010, I had the privilege of meeting Maria Armstrong, who became a founding member of Eats on Feets. We discovered that we had the same questions and considerations, and together we threw ourselves into the study of breast milk sharing. The Four Pillars are a result of our research and has been compiled from our “Resource for Informed Breast Milk Sharing.”

The use of healthy donor milk is the best solution when a mother cannot provide her own milk for her baby. However, there are risks associated with feeding a baby breast milk outside of the closed bio-system of mother-child. It is our mission to provide evidence based information for the safe sharing of milk.

These four pillars form a foundation from which parents can learn how to safely share breast milk. The four pillars are not only useful to parents, but also to pediatricians, midwives and those active in birth and parenting communities. By understanding these easy to implement principles, they too can help babies in those communities by supporting safe breast milk sharing.

The Four Pillars

1. Informed Choice
2. Donor Screening
3. Safe Handling
4. Home Pasteurization

Informed Choice

An informed choice is made by examining all credible, verifiable and relevant information available and using it to carefully and objectively weigh options as well as potential consequences. When parents or professionals look for information in order to safely share breast milk or support breast milk sharing, it is important that ALL of the information is taken into consideration, (not just those which supports personal dogma in regards to breastfeeding), in order to make truly informed choices.

To date, milk banks have set the standard for milk sharing. Unfortunately, these standards are based on blood bank safety

Photo provided by author

protocols, as breast milk is considered a potentially infectious bodily fluid. In certain situations or “non-normal” circumstances (such as cultural or religious need for donors to be identified, or for special dietary considerations), informed parents may choose to deviate from the milk bank standards in order to provide breast milk in such a way that will allow them to maintain their beliefs or to suit their unique circumstances. For example, it is common for breast milk donors who have spent time in Great Britain to be excluded from milk banks due to a concern for exposure to Creutzfeldt-Jakob disease, which upon investigation many recipients may not find to be a cause for donor exclusion. Informed health care providers should support and respect the individual rights of parents to make their own decisions about milk sharing. Deviation from the standard is and should be a matter of personal choice.

Donor Screening

Donor screening is based on three elements: donor self-exclusion, health and lifestyle communication and blood testing. Proper donor screening reduces exposure to potential disease- and non-disease-causing contaminants in breast milk.

Donor Self Exclusion Criteria

Health	<ul style="list-style-type: none"> -Poor general health -Suffering from severe psychiatric disorder(s) -Confirmed positive for HIV I, HIV II, HTLV I or HTLV II -At risk for HIV (incl. sexual partner) -Current outbreak of herpes or syphilis lesion -Current open sores, blisters, and/or bleeding cracks on the skin -Undergoing chemotherapy or radiation treatment -Receiving radiation treatment or thyroid scan with radioactive iodine -On medication contraindicated for breastfeeding -In the fever stage of chicken pox or shingles
Lifestyle	<ul style="list-style-type: none"> -Currently abusing drugs, alcohol or OTC -When donating to a premature or critically ill baby: Drinking, smoking, using certain herbal supplements or taking megavitamins
Social	<ul style="list-style-type: none"> -Feeling coerced -At risk due to religious/social conventions -Undue stress on herself or her family

Health and Lifestyle Communication

The first question that parents usually ask a potential donor is if she has any communicable diseases. Discussing lifestyle and personal history is also a normal part of milk sharing. Some parents may ask to see test results, and others may request screening to be done. Complete and current screening is essential for the safety of breast milk sharing. It is important to “know thy source.”

For non-infectious contamination of milk, getting to know a donor and building a relationship is an important element in establishing the factor of trust. Milk banks primarily rely on self-exclusion to reduce non-infectious contaminants (alcohol, nicotine and other substances) in milk and provide guidelines for mothers in the self-reported and interview surveys about how to ensure self-exclusion. In their own communities, moms can talk on the phone, chat online,

check out each other’s Facebook page, ask for references and meet in to discuss lifestyle, diet, hygiene habits and use of medication. Eats on Feets provides a list of suggested questions for addressing donors.

Donor Blood Testing

Typical blood testing of milk donors includes HIV I & II, HTLV, HBV, HCV, Syphilis and Rubella. CMV, TB and WNV can also be considered for additional screening. Milk banks recommend that screening be done every three to six months. For donors without insurance coverage, free clinics are an option for screening as is becoming a blood donor in most cases.

Safe Handling

While some viral diseases, like Hepatitis B (HBC) and Hepatitis C (HCV), are not passed via breast milk, contamination can occur when there are lesions and open sores anywhere on the skin. Breasts and body should be inspected for lesions, infectious blisters and bleeding nipples before expressing milk, and hands should be diligently washed before expressing milk and handling milk, milk collection equipment and supplies.

Bacterial contamination of breast milk can occur due to improper handling of pumping and storing supplies and of breast milk. Parents can educate themselves about proper handling techniques and follow generally accepted guidelines for storage of expressed milk.

Home Pasteurization

There are two methods of pasteurization that are safely and easily done at home: the Holder method and flash heating. Holder pasteurization is the method used by most US milk banks and can be performed in the home using a marketed single bottle pasteurizer. This method has been demonstrated to kill a wide variety of viruses and bacteria. However, it also has been shown to denature the milk of much of its nutritive properties, many of which may be especially beneficial for premature infants.

Flash heating, not to be confused with commercial flash pasteurization, was developed for use in resource-poor areas for HIV-positive mothers. Flash heating can be accomplished on the stove top or other direct heat source, or with a marketed single bottle pasteurizer. Flash heating has been demonstrated to kill HIV, but its effect on other viruses is theoretical. Due to its relatively lower exposure time, this method has been demonstrated to preserve more of the milk’s nutritive qualities than the Holder method.

Spore Forming Bacteria

It is important to note is that any pasteurizing of breast milk raises the risk of spore release from spore-forming bacteria, like *Bacillus cereus* (B. cereus). While B. cereus is less of a concern for healthy-term babies, it can pose a significant risk to premature babies or those with gastrointestinal issues. This makes a good case for using raw milk from a thoroughly screened donor, and raw milk should also be taken into consideration for feeding premature or sick infants.

Raw Milk

Many families will prefer to use raw, unpasteurized milk so that their babies receive milk with greatest nutritional value. In the case of using raw donor milk, it is imperative for the recipient-donor relationship to be well established and/or for the donor to be thoroughly and recently screened. If this is not the case, the recipient may choose to pasteurize the milk.

Community breast milk sharing

Safe and conscientious breast milk sharing does not stop at medical screening, proper handling and pasteurization. Donors are often invested in the milk sharing relationship on a more intimate level. Pumping or expressing milk is time consuming and donor mothers who dedicate themselves to freely give their breast milk are nothing short of miracles to their recipients. Just as recipients may want to screen donors, donor moms often want to know more about the recipient baby and family, especially when seeking a long term arrangement. The stories that have been shared with us about milk matches have been a wonderful testimony of how families have become friends, not only through sharing breast milk, but by sharing their lives. In some religions, such as Islam, donor and recipient babies become unmarriageable kin

(Mahram). The realization that someone else's baby is growing on her milk makes a donor feel empowered. Recipients, realizing that they are not limited to feeding their babies formula when using their own milk is not feasible, feel empowered as well. The vigilance that we practice when taking care of our children translates beautifully into growing communities of families supporting each other in times of need.

A parent-to-parent milksharing network can also be vital for a fast mobilization of aid in emergencies. Identifying key decision makers who influence infant and young child feeding practices at household, community and local health facility levels is crucial information when determining the priorities for action and response in emergencies. Supporting safe community breast milk sharing has far reaching benefits, and through milksharing, we can all contribute to infant, family, community and ultimately global health.



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Maria Armstrong is a mom of 4, living in Portland OR. She is a doula, a student midwife and a breast milk sharing consultant.

Overview of both pasteurization techniques compared to raw milk

	Holder pasteurization	Flash-heating	Raw (fridge)	Raw (frozen)
Temperature	62.5°C (144.5°F)	72°C (161.5°F)	4°C (39°F)	-15°C (5°F)
Time	Temp. is held for 30 minutes	–Milk is exposed to this heat for a few seconds –Whole process takes ± 5 min.		
Efficacy	–Virtually eliminates the threat of viral and bacterial contaminants	–Virtually eliminates HIV, E. coli and S. aureus –Other pathogens not directly addressed	–Milk may contain pathogens if from unscreened donor –CMV gone in 7 days when refrigerated	–Milk may contain pathogens if from unscreened donor –CMV virtually gone in 3 days when frozen
Damage	–Some decrease in bacteriostatic properties –Lipase destroyed –IgA reduced by 70% –Lactoferrin is reduced by 40%	–Some decrease in bacteriostatic properties assumed –Lipase significantly reduced assumed –IgA mostly intact –Reduced but biologic activity of lactoferrin not impaired	–No decrease in bacteriostatic activity –Lipase activity breaks down milk fats –Anti-infective properties intact	–Bacteriostatic properties 66% by 3 months –Lipase activity breaks down milk fats –Anti-infective properties intact
Spore Propagation	Potentially	Potentially	None	None

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