

Got Milk? Sharing Human Milk Via the Internet

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Human milk is the ideal source of nutrients for infants. Extensive research documents the many positive health outcomes and economic benefits of breastfeeding for both mothers and infants. Numerous organizations of health professionals, such as the American Academy of Pediatrics,¹ American Academy of Family Physicians,² American College of Obstetricians and Gynecologists,³ American College of Nurse-Midwives,⁴ American Dietetic Association,⁵ and American Public Health Association,⁶ advocate that infants be breastfed throughout the first year of life. The United States Breastfeeding Committee, which comprises more than 40 organizations and governmental agencies, is evidence of the country's commitment of time and resources to helping the maternal-infant dyad successfully breastfeed.⁷ The U.S. Surgeon General's Office strongly encourages the continuation of feeding breast milk to infants, particularly when women return to work.⁸

About 70% of women in the United States attempt to feed breast milk to their infants before being discharged from the hospital,⁹ and more than two-thirds of women with children younger than age 18 work outside the home.¹⁰ In addition to feeding their children directly "at the breast," therefore, most women in the U.S. must extract milk from their breasts by mechanical means. A woman with a double-sided electric breast pump can easily and painlessly remove the contents of both of her breasts in approximately 15 minutes.¹¹ Inasmuch as women are separated from their children daily, a child may be fed directly at the mother's breast before she leaves for work, be fed the mother's refrigerated breast milk that she pumped several days ago by daycare providers, be fed the mother's thawed frozen milk that she pumped weeks previously by the father or other caregiver, and finally be fed at the mother's breast again after she returns home. In the meantime, while the mother is separated from her infant, she must mechanically pump her breasts during breaks to have enough milk for upcoming days.

In the Infant Feeding Practices Study II, the largest investigation to date on pumping by U.S. mothers, 85% of 1,564 breastfeeding mothers of healthy,

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singleton infants extracted milk from their breasts while their infants were 1.5–4.5 months of age. By seven months postpartum, 92% of the cohort still breastfeeding had extracted milk from their breasts.¹² Women who pump may produce more milk than is needed by their own infants. The purposes of this commentary are to describe some of the ways human milk has become a valued commodity and highlight some of the potential dangers of sharing raw, unpasteurized human milk.

UTILIZING EXTRA HUMAN MILK

Women with extra milk have to decide what to do with the surplus, which often fills their entire home freezer. They may simply choose to discard the milk that they pumped. Alternatively, mothers may give their milk to family and friends to feed to their own children. Women who conduct a simple Internet search will find that they also can donate their milk to a not-for-profit milk bank through one of the 10 milk banks belonging to the Human Milk Banking Association of North America (www.hmbana.org). Similar to blood donation, members of this association follow strict guidelines for serologic screening for infectious disease and use a thorough lifestyle questionnaire. These milk banks have stringent criteria of pasteurization, storage, and distribution of donated human milk, which is primarily fed to hospitalized infants with chronic medical conditions.

Women who do not want to discard or donate their milk also have the option of selling it. A first step in understanding how to share raw, unpasteurized human milk is simple: just enter key words such as “breast milk” or “human milk” into an Internet search engine along with another descriptor such as “buy, purchase, sell, want, for sale, or share.” This action produces a variety of links to donor milk banks, classified advertisements, blogs, chat rooms on social networking sites, and random posts that describe the scientifically supported and unscientifically supposed characteristics of human milk.

As an example, the site milkshare.birthingforlife.com appears in nearly every search for “breast milk” or “human milk,” along with one of the previously mentioned descriptors. This website advertises itself as an “informational resource” connecting families to one another. After writing a brief paragraph on why an individual wants to join the group, that person will find multiple options on how to send and receive human milk by introducing the parties to one another. The website asks for a self-reported health history of the donor and provides some guidance on the collection,

storage, and preparation of frozen milk. Although this site does not endorse payment for milk, a one-time donation through the online PayPal™ payment program is recommended for website maintenance.

Other sites function more as blogs or personal diaries posted by individuals that invite replies from others. The blog www.breastmilkdonations.com is one such networking site where the author states, “As long as there is a need and a mommy willing to help, I will just be a click away.” This site also matches potential milk donors and recipients after the interested parties provide the author with their contact information. The site describes how to pump, freeze, and ship milk, giving specific instructions on how to label the FedEx® box. The author of this blog also provides her own instructions on how to pasteurize breast milk in one’s kitchen using a large stock pot, Mason canning jars, a candy thermometer, rubber gloves, aluminum foil, and plastic wrap. The site www.breastmilkmonger.com describes shipping methods as well, and also provides a primer on how to avoid legal issues when selling breast milk. The site recommends that a mother ask for compensation “for her time” rather than the “milk itself” so as not to enter into the “illegal activity” of selling bodily fluids such as blood or sperm. This website recommends that each seller of milk create an hourly rate based on the time it takes the mother to pump a given amount of milk.

Searches through classified advertising sites such as www.isell.com, www.bst.com, www.oodle.com, and www.sell.com yield multiple ways to buy and sell milk. The buyer and seller never need to converse through a third party, nor do they communicate directly. Women with too much milk simply place an advertisement. On our search of these sites, we found milk priced from \$1 to \$10 per ounce, often accompanied by pictures of milk in assorted storage containers next to the advertisement. Buyers simply read the online descriptions of the milk and choose from the many options available. On one of the classified advertising sites, there were more than 20 milk sellers from which to choose. Some sellers were listed as “temporarily sold out” and gave time estimates when the supply would again be available. After deciding on which milk to purchase, the buyer simply highlights the chosen entry and then clicks on the “Buy Now” or “Add to Cart” function. At the subsequent “Checkout” screen, all of these sites ask for credit card or PayPal payments. Shipping costs are included in the purchase and overnight shipping is often available. There was no option for returns of milk on any of the sites.

PROCEED WITH CAUTION: OBTAINING HUMAN MILK ON THE INTERNET

The public health implications of human milk sharing are entirely unknown. The “milk” that the buyer gets is an unregulated, untested commodity. Although most mothers probably are honest and send only the milk that they pumped from their own breasts, the market for human milk is usually priced by volume. A buyer will never know if a seller has added a potentially harmful substance to the milk to increase the volume, and, thus, the monetary value. Even the addition of cow’s milk proteins may be harmful for some infants.^{13–16} Infectious agents found in milk, such as human immunodeficiency virus,^{17,18} group B streptococcus,^{19–22} *Klebsiella pneumoniae*,²³ cytomegalovirus,^{24–27} and herpes,^{24–30} can potentially sicken the recipient. Harmful environmental chemicals potentially may be found in milk stored for long periods of time in plastic containers,^{31–34} and repeated cycles of refrigeration-freezing-thawing may alter the integrity of milk’s bioactive factors.^{35–41} Multiple medications appear in breast milk and make it contraindicated for feeding to infants. Drugs of abuse can also be present.⁴² Those who regularly “shop” for milk may feed a single infant the milk of multiple women, which may lead to numerous potentially harmful exposures.

International health organizations state that only under exceptional circumstances should a mother’s milk be considered unsuitable for her own infant and a “healthy wet-nurse” act as a potential alternative.⁴³ However, there is no further explanation given by the World Health Organization or the United Nations Children’s Fund to further define the practical implications and safety of this practice. Experts within the American Academy of Pediatrics recommend against the sharing of any raw, unpasteurized human milk.⁴⁴

In the U.S., as long as women continue to pump, there will be extra milk. Health-care providers must be aware that any infant could be receiving the milk of another mother and should ask about milk sharing when taking a feeding history. Epidemiologic studies should elicit information about the feeding of another mother’s milk to document the scope of this practice. Collaboration between clinicians and researchers is essential to understand not only the risks involved in this practice, but also how to educate the public about the best use of expressed human milk.

Kathleen Rasmussen was supported by the U.S. Department of Agriculture Hatch #399-7427, and Sheela Geraghty was supported by the National Institutes of Health #K23ES014691.

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