

It is essential to properly store your expressed (pumped) milk to maximize its nutritional, immunological and antioxidant qualities. Human milk has anti-bacterial properties that help it to stay fresh and when stored per recommendations, human milk can maintain many of its nutritional qualities making it safe for use. Over time nutrients may break down in expressed milk lowering the quality and as such, it is important to try to give your baby the freshest expressed milk to ensure its rich quality.

Prior to expressing and storing milk ALL mothers should:

- Wash their hands before expressing;
- Use containers that have been washed in hot, soapy water, rinsed and air dried

MILK STORAGE GUIDELINES

This information is based on current research and applies to mothers who have healthy, full-term babies. Babies who are preterm/ in NICU/or ill should use more conservative guidelines.

General storage tips:

- All milk should be dated before storing. Use the *first in, first out* rule and use the oldest milk first.
- Storing milk in 2-4 ounce (60 to 120 ml) amounts may reduce waste.
- Refrigerated milk has less fat loss and more anti-bacterial and protective properties than frozen milk.
- When combining milk expressed from different pumping sessions, ensure fresh milk is chilled in the refrigerator before adding it to previously expressed milk.

Preferably, human milk should be refrigerated or chilled right after it is expressed. Acceptable guidelines for storing human milk are as follows.

Milk Storage Guidelines for Healthy, Full-Term Infants			
Where	Temperature	Time	Comments
Countertop, table (fresh milk)	Room temperature 60° to 85° F (16° to 29° C)	4 hours optimal 6-8 hours at lower temperatures	Contents should be covered and kept as cool as possible; covering the container with a damp towel may keep milk cooler.
Insulated cooler bag	5° to 39° F (-15° to 4° C)	24 hours	Keep ice packs in constant contact with milk containers; limit opening cooler bag.
In a refrigerator	39° F (4° C)	4 days (optimal) 5 days acceptable	Store milk in the back of the main body of the refrigerator.
Freezer (compartment of refrigerator)	5° F (-15° C)	2 weeks	Store milk away from sides and toward the back of the freezer where temperature is most constant. Milk stored longer than these ranges is usually safe, but some of the fats break down over time.
Freezer (compartment of refrigerator with separate doors)	0° F (-18° C)	3 – 6 months	
Deep Freezer	-4° F (-20° C)	6 – 12 months	

Reference: Academy of Breastfeeding Medicine. (2017) Clinical Protocol Number #8: Human Milk Storage Information for Home Use for Healthy Full Term Infants. *Breastfeeding Medicine*, 12(7), 390-395.
Centers for Disease Control and Prevention. (2017). Proper Handling and Storage of Human Milk. Retrieved from https://www.cdc.gov/breastfeeding/recommendations/handling_breastmilk.htm

STORAGE CONTAINERS

Bottles

- glass or hard-sided plastic containers with well-fitting tops
- avoid containers made with the chemical bisphenol A (BPA), identified with a number 3 or 7 in the recycling symbol. A safe alternative is polypropylene, which is soft, semi-cloudy, and has the number 5 recycling symbol and/or the letters PP. You can avoid the risks of plastic completely by using glass.
- containers which have been washed in hot, soapy, water, rinsed well, and allowed to air-dry before use or washed and dried in a dishwasher
- containers should not be filled to the top – leave an inch of space to allow the milk to expand as it freezes

Bags

- freezer milk bags that are designed for storing human milk
- squeeze out the air at the top before sealing, and allow about an inch for the milk to expand when frozen.

- stand/lay the bags in another container at the back of the refrigerator shelf or in the back of freezer where the temperature will remain the most consistently cold.

Disposable bottle liners or plastic bags are not recommended. With these, the risk of contamination is greater. Bags are less durable and tend to leak, and some types of plastic may destroy nutrients in milk.

REHEATING HUMAN MILK

Thawing From Frozen

- Thaw in the refrigerator overnight
- Run warm water over the sealed frozen container of milk
- Place frozen container in cup of warm water
- Use waterless warmer

Avoid boiling and microwaving as these methods will cause loss of nutritional properties of human milk and could unevenly heat making it dangerous for infants to drink (ABM, 2017).

Warming Refrigerated Milk

While many infants may be content drinking room temperature milk, some may have a preference for warmer milk. It is recommended to warm milk slowly in lukewarm water to protect fat content and nutrients.

COMMON QUESTIONS

Why does my milk smell or taste soapy?

Sometimes thawed milk may smell or taste soapy. This is due to an enzyme in milk known as lipase (Newman & Pitman, 2014). The milk is safe and most babies will still drink it. If there is a rancid smell from high lipase when the milk has been chilled or frozen, the milk can be heated to scalding (bubbles around the edges, not boiling) after expression, then quickly cooled and frozen. This deactivates the lipase enzyme. Scalded milk is still a healthier choice than commercial infant formula.

Why is my milk separating?

Human milk naturally separates into a milk layer and a cream top when it is stored. This is normal. It is safe to shake or swirl the milk to combine the cream prior to feeding.

Is it safe to refreeze my milk after thawing?

Previously frozen milk that has been thawed can be kept in the refrigerator for up to 24 hours (Lawrence & Lawrence, 2010). There is currently limited research that supports the safety of refreezing breastmilk as this may introduce further breakdown of nutrients and increases the risk of bacterial growth. At this time, the accepted practice is not to refreeze thawed milk.

Can I reuse previously fed milk if my baby does not finish?

If baby does not finish the bottle during a feed, the recommendation is milk may be reused within 1-2 hours and after this time frame should be discarded to avoid transfer of bacteria from baby's mouth to bottle (ABM, 2017). Many moms find storing milk in smaller quantities can help reduce waste if baby does not finish the bottle.

Is it safe to store my milk in a shared refrigerator?

Expressed milk can be kept in a common refrigerator at the workplace or in a day care center. The US Centers for Disease Control and the US Occupational Safety and Health Administration agree that human milk is not among the body fluids that require special handling or storage in a separate container (CDC, 2015).

I have thrush; is my milk safe?

If you or your baby has a thrush or yeast/fungus infection, continue to breastfeed during the outbreak and treatment. While being treated, you can continue to express your milk and give it to your baby. Label any milk stored while you or baby is undergoing treatment. Be aware that refrigerating or freezing milk does not kill yeast. The safest, most conservative option is to discard pumped milk during thrush treatment. Some research shows using frozen milk pumped during thrush treatment should not pose any risk to healthy babies especially if the milk is boiled prior to use (Morbacher, 2010; Newman & Pitman, 2014). Read our post on **thrush** (<https://lilii.org/breastfeeding-info/thrush/>).

References

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Mohrbacher, N. (2010). *Breastfeeding Answers Made Simple*. Texas: Hale Publishing.

Newman, J. & Pitman, T. (2014). *Dr. Jack Newman's Guide to Breastfeeding, Revised Edition*. UK: Pinter & Martin, Ltd.

IS YOUR CONCERN OR QUESTION NOT COVERED HERE?

Please contact a local La Leche League Leader (<https://lilli.org/get-help/>), with your specific questions, or visit our Breastfeeding Support Online Community (<https://lilli.org/get-help/breastfeeding-support-facebook-group/>).

Our FAQs present information on topics of interest to parents of breastfed children. Not all of the information may be pertinent to your family's lifestyle. This information is general in nature and not intended to be advice, medical or otherwise.

Medical questions and legal questions should be directed to appropriate health care and legal professionals.

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