Storing and Preparing Expressed Breastmilk

Human milk is a fresh living food with many antioxidant, antibacterial, prebiotic, probiotic & immune-boosting properties, in addition to nutrients. Breastmilk has good bacteria, which establishes normal gut flora, & probiotics, which ward off bad organisms.

Preparing stored breastmilk for feedings

Feed your baby the freshest available milk first: The quality is at its best, and current antibodies fight infections you and your baby were recently exposed to.

Cooler breastmilk is better: It gives your baby more milk fat than warm milk does.

- Refrigerated milk at 40°F contains solid fat which floats in the milk. This solid fat melts to oil fat at body temp (98.6°F).
- The oil fat in warm milk sticks to the side of the bottle and gets left behind. So, less fat gets to your baby.

Warming breastmilk: – if your baby won't drink it cold.

- Warm breastmilk over 20 minutes in lukewarm water (less than 104°F).
- The milk is body temp (~98.6°F) if you can't feel a drop of it land on your wrist.
- Don't microwave or heat the milk in a hot water bath (~ 175°F) because overheating the milk inactivates the good stuff.

Storing freshly pumped milk

Cool and clean breastmilk is best: Fewer bad bacteria means you can store your milk safely for a longer time.
Be very clean during milk expression, because there's less bacteria to grow during storage.

- There's no need to discard the first drops of milk.
- Wash equipment in hot soapy water and rinse, or wash in the dishwasher.
- Air dry, or dry with paper towels.

Keep the room temperature less than 80°F, because warm air grows bacteria faster.

Containers: Use glass or food grade plastic that's BPA free.

Room temp (50-85°F):	• **Breastmilk can be out for up to 6-8 hours if the room temp is *under* 80°F.** • **It can be out for only 4 hours if the room temp is *over* 80°F,** because warm air grows bacteria faster. • If you're unsure when you'll use the milk, refrigerate it right away.
Cooler ice pack (60°F):	• Breastmilk is **good for 24 hours**. It's OK to store breastmilk in a work place refrigerator.
Refrigerator (40°F):	• Breastmilk is **good for 4-8 days.**
Frozen (-4 to 25°F):	• Breastmilk is **good for at least 3 months.** Label with the date. • Many sources say it's acceptable for 6-12 months, ideally in a deep freeze, with rare exposure to warm air. • Prevent intermittent rewarming of milk: Keep it away from the walls of a self-defrosting freezer. Store it in the back so it isn't warmed when the freezer door opens. • Seal up containers well. Avoid punctures in freezer bags. Leave space at the top for expansion. • **To thaw, it's best to set frozen milk in the refrigerator overnight.** • **Or, run it under warm water, set it in a container of warm water, or use a waterless warmer.** • Don't refreeze thawed milk. There's too little research on this.
Cool freshly expressed milk before adding it to already cooled or frozen milk. This prevents rewarming of cool stored milk.	
2 hour rules: **Leave breastmilk set out for *less than* 2 hours if it has been thawed for more than 24 hours.** **Discard left-over breastmilk *within 1-2 hours***, as previously fed milk may be contaminated with bacteria from baby's mouth. Use your judgement if things are very clean, if it wasn't thawed for long, and if the room temp isn't too warm.	
Soapy smelling breastmilk: Lipase enzymes break down fat to fatty acids, which are then oxidized. This prevents growth of bacteria but leaves a bad smell. Freezing at -122°F, instead of just -4°F, prevents the bad smell. Heating milk will stop the lipase enzyme, and the smell, but heat deactivates good stuff too. Most babies drink this milk, just as we smelly foods, like eggs, cheese, and fish.	
Purulent, foul, string breastmilk: Throw it out.	
Nipple pain/bacteria/yeast: *Don't* throw it out.	

Declining quality of stored milk – what is known.

Frozen breastmilk (-4°F): 0°F keeps foods safe from bacterial contamination, but enzymes may remain active, which changes milk quality.

- Frozen 6 weeks – has the same good bacterial viability as fresh milk.
- Frozen 3 months – less fat, protein, & calories. Lower lactoferrin levels and activity
- Frozen 1-5 months – very low vitamin C levels
- Frozen 6 months – Colostrum's cytokines, IgA, & growth factors remain stable.

Refrigerated breastmilk (40°F):

- 48 hrs – IgA, cytokines and growth factors are good
- 4 days – Lipids and lipase are stable
- 5 days – Lactoferrin is stable

Info adapted from the Academy of Breastfeeding Medicine 2017 Protocol
LincolnPedsGroup.com KayAndersonMDmom.com 12/20