



STORING HUMAN MILK

There may be times when you wish to express and store your own milk for later use. Human milk is remarkably resilient and stores well due to its antibacterial properties. Storing your milk safely helps to maintain its quality and minimize the loss of antibodies and nutrients.

KEY POINTS

- Always wash your hands in hot soapy water before expressing milk.
- Store milk for as short a time as possible.
- Remember: the fresher the milk, the better.

Storage containers

Label every container of milk with the date you expressed it. If the milk will be given to your baby in a daycare setting, put your baby's name on the label.

Reusable hard containers



- Use glass or hard plastic containers with well-fitting lids. Small reusable canning jars or bottles are excellent choices.
- Avoid plastic containers containing the chemicals bisphenol A (BPA) or bisphenol S (BPS).
- Wash containers in hot, soapy water. Rinse well and allow them to air-dry before filling them with your expressed milk.
- Or wash and dry the containers in a dishwasher.
- If freezing your milk, leave an inch of space to allow the milk to expand as it freezes. (You don't want your containers to break or the lid to come off in the freezer!)

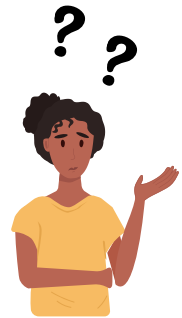
Milk storage bags

- Choose bags that are made for storing human milk. (Bottle liner bags and plastic food bags are not safe storage options. They may leak and the type of plastic used may destroy some nutrients in human milk).
- Consider double-bagging to help prevent leakage accidents.
- Squeeze out the air at the top before sealing.
- Allow about an inch for the milk to expand if it is going to be frozen.
- Stand the bags in a rigid container in the refrigerator or freezer.



How much milk to put in each container

- In order to avoid wasting your valuable milk, store it in a variety of amounts.
- For example, store in amounts of **15ml (½ oz), 30ml (1 oz), 60ml (2 oz), 90 ml (3 oz) and/or 120ml (4 oz)**, depending on the age of your baby.
- Smaller quantities are easier to thaw.
- Storing in a variety of volumes allows you to choose the amount your baby is likely to drink at a single feeding.
- Any milk that touches your baby's mouth during a feeding needs to be discarded within **1-2** hours.
- Any milk expressed in the same **24**-hour period can be added to the same container in the refrigerator.
- Cool the newly expressed milk in a separate container in the refrigerator for **30 to 60** minutes.
- Then add it to the container of milk already in the refrigerator.



How long to store human milk

- It is best to refrigerate or chill milk right after expressing it.
- Whenever possible, give your baby refrigerated milk before frozen milk. Some nutrients are lost when milk is frozen

Milk Storage Guidelines

Where	Temperature	Maximum Storage Time
Room temperature (fresh milk)	16° to 26°C (60.8° to 78.8°F)	4 hours optimal 6-8 hours is acceptable under very clean conditions and at lower room temperatures
Insulated cooler bag	-15° to 4°C(5° to 39.2°F)	24 hours (This number is based on limited research. The less time the better. The ice packs should be touching the milk storage containers and opening of the bag should be minimized.)
Refrigerator	<4°C (<39.2°F)	4 days optimal 5-8 days under very clean conditions
Freezer compartment inside a refrigerator (inside a bar-style fridge, for example)	-15°C(5°F)	2 weeks
Freezer compartment of a refrigerator with a separate door (standard home freezer)	-18° to -20°C (0.4° to -4°F)	3 months optimal 6 months acceptable
Deep freezer	-18° to -20°C(0.4° to -4°F)	6 months optimal 12 months acceptable



Warming human milk

Your milk does not need to be warmed to a particular temperature. Babies can drink milk straight from the refrigerator or at room temperature. However, many babies prefer it to be warmed to body temperature.

Frozen milk can be thawed by:

- ❄ placing it in the refrigerator overnight
- ❄ using an electric milk warmer
- ❄ holding it under warm running water
- ❄ setting it in a cup of warm water (no more than 40°C/104°F)

Slow thawing in the refrigerator results in less fat loss than thawing using warm water.

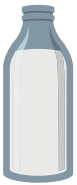
Thawed milk, or milk that has been refrigerated, can be warmed slowly

- 💧 under lukewarm water
- 💧 in a cup of warm water
- 💧 using an electric warming device

What to avoid:

- ⊗ Do not place a glass container with frozen milk under very warm water. It may break.
- ⊗ Do not boil human milk. This causes the loss of valuable nutrients.
- ⊗ Do not microwave human milk as this heats the milk unevenly.
It creates hotspots that may burn your baby's mouth when your baby drinks it.
It also causes the loss of important nutrients. (ABM, 2017).

Using stored milk



Refrigerated milk will stay fresher than milk that was once frozen. It is helpful to think ahead as to when the milk is likely to be needed before deciding whether to refrigerate or freeze it.

- 💧 Fresh or previously frozen milk that is warmed but not used can be returned to the fridge for a later feeding.
- 💧 Fresh or previously frozen milk that is left over in the container after a feeding, can be given to your baby within the next 1-2 hours. After 2 hours, discard the milk.
- 💧 Frozen milk which has been thawed can be kept in the refrigerator for up to 24 hours.
- 💧 Discard after 24 hours. Do not refreeze it.
- 💧 Avoid mixing human milk with formula in the same bottle to make a full feeding. When mixed with formula, there is a decrease in the number of lysozymes in human milk and a potential increase in the E-coli bacteria (Jones, 2019). Lysozymes are cells that provide protection against bacteria.

Additional things to consider

Stored human milk separates into a milk layer and a cream layer. This is normal. Swirl it gently to redistribute the cream before giving it to your baby.

If you have thrush (overgrowth of yeast in your body), you can continue to breastfeed your baby during treatment.

- Milk expressed during treatment for thrush is safe to give your baby.
- Refrigeration and freezing do not kill yeast. However there is no evidence that feeding your baby milk that was expressed during a yeast outbreak leads to a recurrence of the yeast infection.
- If you are concerned, label the milk expressed during a thrush outbreak. Before using it, heat the milk to 63°C (144.5°F) for 30 minutes. This will kill bacteria and yeast. Cool the milk before feeding it to your baby.

Occasionally, breastmilk that has been frozen and thawed smells soapy or metallic, or just different from fresh milk. This is due to the breakdown of milk fats over time.

- This milk is safe and most babies will still drink it.
- If your baby won't drink it, consider scalding future expressed milk. It stops the enzyme lipase in your milk from breaking down milk fats. This can prevent your milk from tasting soapy.
- Scalding also destroys some immune factors in the milk so only do this if your baby refuses your previously stored milk.
- Scalding must be done before you store your milk. It cannot fix the smell if your milk already smells soapy.
- To scald your milk, heat it to about 82° C/180°F). The milk should just begin to bubble around the edges of your pan. It should not come to a full boil. Then take the milk off the stove and cool it as quickly as possible. Store your milk in the refrigerator or freezer.

Milk that is stringy and smells foul should be discarded and not fed to your baby.



References

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