

Handling Human Milk

Human milk declined in popularity from 1900 to 1960, but has been on the rise since then and is now viewed by all reputable medical authorities as the best milk for most infants and toddlers.

The American Academy of Pediatrics would like infants to be breastfed for at least the first year, and the CDC and World Health Organization recommend at least the first two years. In 2007, 74% of US moms initiated breastfeeding at birth¹. The goal is to get more mothers to begin breastfeeding, and to breastfeed longer. As a childcare provider, you have a unique opportunity to help mom keep breastfeeding as long as she and baby want to.

Human milk is the very best food for infants, so we need to know the best way to handle mom's milk and to support the lactating mom. Here are the latest recommendations from the CDPHE, CDC, AAP, WHO and Le Leche League as well as some recent medical research.

Handling mom's milk: The basics



- **Hand washing:** Before you handle the bottles or feed the baby, be sure to wash your hands.
- **Labeling:** According to the CDC, breast milk is not one of those body fluids which require special handling, but can be kept in your refrigerator or freezer along with everything else. When unpacking the bottles, make sure they are labeled with the baby's name and date and time they were pumped. Bottles need an inch of space at the top to allow for expansion in the freezer, and it is best to freeze in portions of 2- 4 oz, so divide full bottles and label them all. Milk may look bluish, watery or have the fat floating on the top - that's normal!
- **Storing mom's milk:** Think "FIFO" First In, First Out: Use the oldest milk first. *
 Refrigerator (34°-40° F): 24 hours, give leftovers back at end of day.
 Freezer attached to your refrigerator (below 30° F): at least one month.
 Chest freezer (0° F or below): 3 to 6 months.

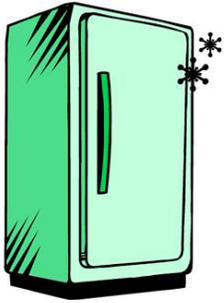


It is best to store milk in the back of the refrigerator or freezer compartment, where it will stay colder, and not in the door shelves.

For quick reference post these breast milk storage temps and times on the outside of your refrigerator and to have a freezer thermometer available to take your refrigerator and freezer temps once a week or so. If mom gives you a 5-10 oz bottle of her milk, and you don't think you will use the milk that day, freeze it in smaller (properly labeled) portions of 1 to 4 oz, about enough for one feeding. If mom pumps small amounts, that is fine, just put them into the freezer separately, without adding them to another bottle.

The best storage containers for breast milk are glass or BPA-free plastic baby bottles with screw-cap lids, or heavy plastic bags especially made for storing breast milk. Do not use

¹ Healthy People 2020 MICH-21 data from National Immunization Survey, www.healthindicators.gov



regular plastic bags or formula bottle bags, because they will often split and leak. Do not store breast milk in ice cube trays.

Ask mom for extra bottles of her milk to keep in your freezer so you never run out if baby is having a growth spurt and drinks more. Although fresh milk has more nutrients, the storage life is much shorter, so keep out enough in the refrigerator for only that day and put the rest in the freezer.

- **When to feed:** Babies receiving human milk often eat more frequently and in smaller amounts than formula-fed infants, because human milk is more digestible. Nuzzling on your clothes when holding them, sucking their fingers, or chortling with delight when you show them a bottle are all good signs they may be ready to eat.

Newborns often drink every two hours or so, and may, or may not, lengthen the times between feedings as they get older. Some breastfed babies adjust their schedule when mom goes back to work by sleeping in two four hour shifts at the childcare provider's house, and then eating more often when they're with mom.

- **Preparing the milk:** Only prepare as much milk as this baby usually takes. If they drink it all and seem to want more, warm up an extra ounce in a clean bottle. Use the oldest milk first, as long as it is still within the acceptable storage time. Unused human milk (or mixed formula) in the refrigerator must be returned back to the parents at the end of the day, so of course, use refrigerated milk first before you defrost a frozen one. Refrigerated fresh milk should best be used within 24 hours of pumping, but if not used by 96 hours, then discarded. Previously frozen milk must always be discarded after 24 hours of being defrosted and may not be re-frozen.

Human milk and formula can NEVER be defrosted or warmed in a microwave or on top of the stove. Defrost milk in the refrigerator or a bowl of warm water and warm the milk in water in a crock-pot, a bottle warmer, or a bowl of warm water. Its nice if you have access to a baby bottle temperature indicator, but if not, test a drop of the milk on your wrist. If its too hot for your wrist, its too hot for baby to drink.

Swirl the milk gently to mix the fat in, but do not shake the milk, in order preserve the special qualities in human milk. Do not boil mother's milk.

- **While feeding:** Of course you know that babies must be held when feeding a bottle, and looked at lovingly, not allowed to hold their own bottle or have a bottle in the crib.

You will know when baby has had enough to drink for now because they will turn their head away from the nipple, push it away with their hand, or just chew on the nipple instead of drinking. Sometimes after burping, they'll be ready for another go at the bottle, but sometimes not. Babies having a growth spurt will want to feed more frequently and usually take more milk at each feeding.



Breastfed babies can get growth spurts at any time, but the most common times to have growth spurts, and thus increased drinking of milk, is between:

1 - 3 weeks, 6 - 8 weeks, 3 months, 6 months, and 9 months²



Moms often worry about their milk supply when baby is having a growth spurt and may benefit from reassurance that the more times they nurse, the more milk they will make. Lactation consultants are great resources, so keep their phone numbers handy!

Visit www.ilca.org and scroll down to “Find a Lactation Consultant.”

- **One Hour:** Colorado guidelines for feeding human milk and formula are the same: once the bottle has been warmed and the baby’s lips touch the nipple, baby has one hour to drink as much of it as they want, but then the bottle contents must be discarded and the bottle washed, rinsed and sanitized before being used again. Do not save milk from a previous feeding to use at the next one!
- **After feeding:** Bottles and nipples must be washed, rinsed and sanitized prior to being re-used, so if you don’t have time to do this, be sure parents provide enough clean bottles.

Recent research tells us 60% of lactating women stop breastfeeding sooner than they want to³, for reasons ranging from concerns about milk supply to problems with pumping. If mom has any problems with nursing, be sure to recommend that she contact a local IBCLC certified lactation consultant, or Le Leche League leader, to get help to solve the problem. These ladies are fabulous at solving nursing problems, so encourage mom to get their help!

In conclusion, the current Colorado state guidelines for handling breast milk are what we must follow as licensed family child care providers in our homes, even if parents handle the mom’s milk differently in their home. For example, if mom asks you to keep milk from a previous feeding to use at the next feeding, just gently let her know that as a licensed child-care provider, you have to discard the milk one hour after beginning a feeding. Remember to wash your hands, label bottles, use storage temps and times, defrost appropriately, discard milk an hour after starting a feeding and wash, rinse and sanitize bottles and nipples prior to re-use.

² Source: Le Leche League

³ Odom, EC et al, Reasons for earlier than desired cessation of breastfeeding. *Pediatrics* 2013 Mar;131(3):e726-32.

Additional nutrient needs: Vitamin D and Iron

Although it is the role of the primary care health practitioner to discuss and recommend nutritional supplements to the parents, sometimes it is helpful for parents to have a helpful and informed reminder to go have that talk.

Vitamin D is essential for calcium absorption; to build strong bones and allow muscles to move. Vitamin D may help prevent certain cancers. Our body makes vitamin D when we receive enough sunshine, however most infants are shielded from the sun to avoid sun burn and skin cancer later on in life. People with darker skin, who live in northern latitudes, or are covered up all day are at increased risk for vitamin D deficiency. The current guidelines for breast fed infants, from the American Academy of Pediatrics, based on the research available in 2008, is that all breast fed infants receive 400 IU of vitamin D as a supplement, starting in the first few days of life, to prevent bow legs, called “rickets“, and prevent failure to thrive, Type 1 diabetes, stunted growth and other problems. (Be aware that recent research within the past 5 years shows that a fully lactating mother taking a daily large dose of vitamin D of 6400 IU will have the same effect on the infant’s blood levels as providing a daily 400 IU vitamin D supplement to the baby) The AAP recommends 600 IU for everyone over 1 year of age. There is, however, widespread vitamin D deficiency in the USA because many breastfed infants and older children are not receiving vitamin D supplements. Encourage parents to speak with their primary care practitioner about this.

Iron is a nutrient vital for the growing infant brain. If they don’t get enough, there can be irreversible brain damage. While the iron in breast milk is very well absorbed by infants, there comes a time in a child’s life when they may need more. Only 3% need iron supplementation before 6 months of age (thought to be a genetically-based increased need for iron by that individual baby), and scientists are still investigating at what point most breast-fed infants need extra iron besides what they obtain from their mom’s milk. For now, the recommendation from the WHO and the AAP is to begin feeding iron-rich foods at 6 months of age. Serve iron rich foods with vitamin C-rich foods to increase the absorption of iron. Take a look at the list of iron-rich and Vitamin C-rich foods found inside this course.

Be sure to provide a daily source of iron-rich and vitamin C-rich foods to breast-fed infants 6 months and older, if parents are ok with that, and remind parents to talk about their child’s need for iron and vitamin D with their health care provider.

Cup feeding your breastfed baby

There are times when it isn't possible to breastfeed your baby and you need to find another method of feeding her. While bottles are often the obvious choice, there is growing interest in using a cup when you intend to breastfeed your baby but are currently unable to. Using a cup will reduce the possibility of nipple confusion - which is common in newborn babies who are fed by both a bottle and the breast.

When should I consider cup feeding?

Cup feeding is most commonly used as the primary source of milk in premature babies who are yet to develop their sucking reflex or have a sucking reflex that is still too weak to allow them to breastfeed successfully

Young babies who drink from a cup ordinarily use a 'lapping' action to drink - much like a cat laps its milk. While not actually sucking, drinking in this way still teaches babies valuable lessons - how to adjust their intake of milk, and how to move their tongue forward when drinking - that will help get breastfeeding established later.

There are times when you may need to use cup feeding as an alternative to breastfeeding for older babies - these are most commonly as a result of maternal health issues such as cracked nipples, or ill health resulting in physical separation from your baby. If you are planning to resume breastfeeding, it's important your older baby is kept on a cup for only a short time as she may resist transferring back to the breast.

Learning to cup feed

Cup feeding is a skill that needs to be taught to both mother and baby and it is essential that you get help from a healthcare professional who will be able to guide you and check that you are doing it correctly.

To successfully cup feed check that:

1. Your baby is in an upright or semi-upright position. If you hold your baby in a reclining position, there is a chance that she will choke as a result of milk entering her lungs.
2. Make sure your baby is alert and properly awake
3. You keep her hands out of the way of the cup to avoid spills
4. You tilt the cup of milk so that its rim is touching your baby's lower lip.
5. You aren't pouring the milk into her mouth - she should be sipping or lapping the milk. This will allow her to have some control over how much and how fast she drinks.
6. You don't take the cup away if your baby takes a break - wait until she pulls away from the cup before finishing the feed.
7. Check that your baby puts her tongue forward to drink from the cup - this will ensure that she can easily transition back to the breast when your circumstances allow it.
8. Measure the infant's intake at each feeding and record for each 24 hour period

IMPORTANT!

Learning to drink from a cup is an important skill for your baby to learn, however, this skill usually develops as you introduce solid food to your baby's diet. The above cup feeding tips are specifically designed for very young babies who cannot currently breastfeed but who will return to the breast in the near future. This article was mostly written by Ella Walsh for Kidspot website

Transitioning to cup drinking for the older infant or toddler

Some children are ready to use a cup at age 9 months, some wait until they are 15 months or

older. Here's what various authorities have to say on the matter of transitioning to a cup:

CO Dept of Health and Environment⁵ Family Child Care Homes Rules: K. Water must be offered and available at all times... O.5. Infants and toddlers must not be allowed to hold their own bottles or sippy cups when lying flat, to prevent choking, ear infections, bottle mouth or tooth decay.

American Academy of Pediatrics⁶: recommends using a cup instead of a bottle before the child turns 18 months of age, otherwise they may develop baby bottle tooth decay and drink more milk than is healthy. Start at age 12 months with a training cup or one with a spout at lunch time. It may take a few weeks to learn how to use a cup, so be patient. Bottles, pacifiers and sippy cups are not recommended for use after age 12 months because of the high incidence of injuries to children over age one who fall while holding these products in their mouths.

World Health Organization⁷: If possible, wait until your child is at least two before using anything except human milk. Teach your baby's caregiver to feed your baby with a cup, and not to use a bottle. Cups are cleaner and they do not satisfy a baby's need to suckle, so when you come home from work, your baby will want to suckle at the breast, and this will stimulate your breastmilk supply.

US Center for Disease Control and Prevention⁸: Recommend cup feeding, using mother's milk. Avoid feeding infants and toddlers coffee, tea, soda or other low nutrient liquids.

Academy of Nutrition and Dietetics⁹ Infants from 4 to 6 months of age will usually sip from a cup if someone else holds it, however a bottle is usually the best choice for an infant under 6 months of age. Older infants are usually coordinated enough to drink from a cup or straw.

American Dental Association¹⁰ See attached handout regarding selection of training cup for children learning to drink from a cup.

⁵ www.colorado.gov

⁶ www.aap.org

⁷ www.who.int WHO CDD Program, Participants Manual Part Four, Sessions 31-33

⁸ www.cdc.gov Infant feeding in the context of HIV Infection

⁹ www.eatright.org

¹⁰ www.ada.org From baby bottle to cup, 2004.

Iron-rich foods for breast fed infants >6 mo

The WHO and the CDC say its best to begin feeding complementary foods at age 6 months, using meat, poultry, fish or eggs daily and gradually increase from 130 kcal at 6 -8 mo using 2-3 meals; to 580 kcal at 13-24 mo, using 3-4 meals plus 1-2 snacks. This is for babies receiving average amounts of mom's milk. Babies need iron and zinc-rich foods at 6 months for optimal brain development.

You can get a KidCo or Munchkin infant food grinder from amazon.com for about \$10, which can pay for itself. Baby food meat in a jar costs \$15/lb for meat that is neither organic nor grass-fed, whereas organic, grass-fed ground beef costs \$7/lb.

Sometimes children don't like the taste of meat, so it can help to mix it with something tasty like sweet potato or mango. Here's a recipe for an infant 9-12 months old⁴:

	Iron, mg	Zinc, mg	kcal
3 oz cooked 90% lean ground beef*	2.6 mg	5.7	195
¼ cup baked sweet potato			40
Half an orange, peeled or ¼ cup mango pieces			30
¼ cup boiled pureed kale, collards or spinach ♣			13
1 tsp wheat germ oil (for a full day supply of vitamin E)			45
			323 kcal

* 3 oz Ground elk, buffalo or venison can be used in place of the beef

♣ Green leafy vegs provide chlorophyll, which helps decrease carcinogen formation

Grind in a food processor, divide into 3 small portions, refrigerate and serve one portion at each meal. It will taste better if dish is warmed in a bowl of warm water. Toddlers may enjoy this as a spread on saltine crackers.

OTHER iron and zinc sources to use in place of beef:

3 oz cooked 93% lean ground turkey + 3 TBSP cooked, drained lentils, or
2 cooked egg yolks + 3 oz chicken meat or wild Alaska salmon + 1 TBSP molasses

Note: it would take 9 oz of chicken to provide the same amount of iron as 3 oz of beef, and the iron from the beef would still be better absorbed by the infant, but chicken has a milder taste, so may be more palatable than beef for some babies.

Less absorbable iron sources include 1 TBSP regular molasses, 1 mg iron;
¼ cup cooked lentils, 1.65 mg iron; 5 prunes, 0.5 mg iron

Send feedback about this recipe to me at ralff@rof.net

⁴ Nutrient database used: National Nutrient Database, Nutrient Data Lab, USDA website
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