CORPORATE LACTATION SERVICES

PROVIDING BREASTMILK THROUGH EXPRESSING (EXCLUSIVE PUMPING)

MAKING THE DECISION TO EXCLUSIVELY EXPRESS (PUMP)

Congratulations on your decision to provide the gift of your milk to your baby. The benefits of your milk to your infant include many short-term benefits such as protection from infection and illness such as respiratory and gastrointestinal illness, ear infections and meningitis. There are also many long-term benefits for your baby such as increased IQ, decrease in celiac disease, diabetes, asthma etc.

Some women have difficulties with feeding their baby at the breast. Other new moms decide in advance to pump and bottle feed their baby. You may be a woman who has decided in advance that you will provide milk by expressing. You may be a mother who is considering this option, or maybe you have already come to this decision after having breastfeeding difficulties in the early days, weeks, or months of breastfeeding.

In some cases, your lactation consultant may be able to help you with strategies or refer you to other providers that may help overcome the difficulties you are having. Then you may decide if you would like to pursue those options. Certainly, some infants are not able to breastfeed effectively, and some mothers need to stimulate milk production so much so that expressing is the best option.

You may be wondering how this feeding choice differs from direct breastfeeding. Questions may come to you mind such as will it provide as many benefits to your baby, and how should you initiate or maintain milk production through exclusive pumping. All mothers need accurate information and non-judgmental lactation support.

HOW IS EXCLUSIVE PUMPING DIFFERENT FROM DIRECT BREASTFEEDING?

Biologically, when a baby is born eager and alert to nurse, baby goes on to create a robust milk production via frequent and effective breastfeeding. A newborn lets their mother's body know how much milk to make (demand of milk). In this scenario, the baby stimulates the milk production. The mother's body has a big part too. Her breasts and brain respond to the baby's demand, and her body creates the supply of milk. When milk production is initiated and maintained through expressing/pumping, the demand created by the minutes/suction of expressing milk may be different, and a mother may notice it takes longer to provide enough milk for baby, and supplements may be needed especially in the early days.

Your baby's intake may be different. Babies fed breast milk by bottle in early infancy were more likely to empty their bottles faster compared to breastfeeding infants taking a bottle occasionally. Infants fed both at the breast and with bottles of expressed breast milk gained weight at a similar rate to those only breastfed, but infants gained more weight per month when fed only by bottle (whether it was formula or breast milk in the bottle). There are multiple theories for why this might happen: Babies can get milk out of bottles quicker than breasts, caregivers tend to encourage infants to finish their bottles, and it is thought that breastfeeding helps teach a baby to recognize when full and when to stop eating.

Some research shows that the properties of and ingredients in breastmilk and bacterial count may change due to the method of expressing, storing and the age of the milk. Because a mother needs to wash her hands often, clean her pump parts and bottles frequently, and pay attention to storage guidelines - expressing milk can become cumbersome. Milk that has been refrigerated or frozen, i.e. not fresh "from the tap" loses a little bit of its immune and vitamin content.

Freezing can break down immunological cells and fats (but doesn't affect antimicrobial proteins), refrigeration reduces the amount of some vitamins, and both storage methods reduce antioxidant activity. Microwave thawing, which **is not recommended**, drastically decreases breastmilk's anti-infective capacity. See section on Storage Guidelines.

Your baby's incidence of illness, therefore, may be different. There is evidence that infants who were not directly breastfed have a significant increase in coughing and wheezing episodes compared to those who were breastfed. The position of baby's head during direct breastfeeding, as well as the mechanics of the suck/swallow/breathe cycles during breastfeeding may help to prevent ear infections. Bacterial counts are higher in milk expressed with a pump compared to milk expressed by hand (often not practical with exclusive expressing).

The important ingredients and wonderful properties of your milk are still there. If you can provide any or all of your own milk, read on for storage guidelines and tips, and ways to provide the maximum benefits to your baby.

Breastfeeding provides many benefits to women also such as: increased postpartum weight loss, reduced risk of postpartum depression, reduced risk of reproductive cancers, osteoporosis, Type 2 diabetes, heart disease, and high blood pressure. Studies have not determined if there are differences in those benefits with exclusive pumping. The intimate bond with feeding a baby at the breast is unique with the close skin to skin contact. Bonding with your baby will happen in many ways and you may want to include skin to skin holding to enhance this aspect of bonding If exclusively pumping. See below for details.

BABY NEEDS FEEDINGS THAT ARE ENJOYABLE, SAFE, AND DEVELOPMENTALLY APPROPRIATE

Mother and baby want and need skin to skin (STS) contact. STS enhances bonding, helps milk production, and may improve the transfer of immunities. Throughout the first days and weeks, and anytime thereafter, STS is a great way to connect (and later, re-connect), and can be part of any plan to enhance milk production.

Paced bottle feeding is an important technique to help your baby regulate the fast flow of the bottle. It is important to learn, practice, and to share with anyone caring for your baby.

https://www.youtube.com/watch?v=OGPm5SpLxXY

Drawing on how babies breastfeed, this feeding method imitates the control the baby would have over feeding, letting baby take natural breaks. In this way, bottle feeds are not "forced" and overfeeding can be prevented. Airway and ears will be in a favorable position, as well.

During one of the natural breaks that your baby takes, and especially if you are holding baby in the crook of your arm - switch sides. Allow baby to see you and the world from a different perspective. Those natural breaks are also a great time to talk to and burp your baby. Burping is not such a big deal, though, as the digestive system allows for air release from either end.

It can seem convenient, especially as baby gets older, to prop the bottle for baby, or to allow baby to bottle feed him or herself. There are serious risks to propping including ear infections, tooth decay, overfeeding, even choking. One of the most important reasons to hold your baby and the bottle for all feeds is for baby to receive the essential interaction and cuddle time that goes along with feeding.

You may be able to do some limited direct breastfeeding (this is not always the case), or you may be willing to breastfeed in the early days or weeks before switching to your planned exclusive pumping routine. If so, you may notice, as many women do, that this helps your production. If you are initiating lactation, you will likely notice that this helps establish your production more fully and quickly.

TIPS AND LINKS TO HELP YOU

If you are planning from the start to exclusively pump, consider direct breastfeeding for the first days or weeks to establish milk production – refer to the section above.

Otherwise, start expressing as soon as possible after your baby's birth. Hand expression often works better than mechanical pumping in the first day or two. It's "low tech" and allows more skin to skin time, less clean-up, and less wasting of colostrum. When you do add or switch to pumping, a good double electric pump is necessary.

A baby is expected to feed about 8-12 times per day, on average. Therefore, expressing every 2 to 3 hours around the clock will mirror this pattern. Expressing for about 20 minutes is recommended. Often, expressing for 5 minutes after the flow of milk slows way down, will ensure thorough breast drainage.

Incorporate hand expression and "hands on" pumping techniques into your expressing plan. Relying solely on mechanical milk removal often does not effectively drain the breasts and therefore can lead to low milk production. See the links below:

https://med.stanford.edu/newborns/professional-education/breastfeeding/hand-expressing-milk.html

https://vimeo.com/65196007

https://med.stanford.edu/newborns/professional-education/breastfeeding/maximizing-milk-production.html

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Ensure you are using the correct size breastshield. Be aware that this size may change over the course of lactation. Warm the flanges before use; ensure tubing is dry and clear after each session.

Medela – Choosing Personal Fit breast shield size https://www.youtube.com/watch?v=UpH1E1ym5rI

http://www.medelabreastfeedingus.com/assets/file/1908488_RevA%20Breastshield%20Sizing%20Tool.pdf

A hands-free bra or bustier is helpful and can be purchased or made from one of your regular bras or sports bras.

Handwashing is critical before each pumping session. Closely follow your pump's instructions on cleaning and maintenance. Some pump parts, especially the soft and small parts, may need to be replaced periodically, since you will be using your pump many times each day.

Consider rental of a multi-user, hospital-grade pump – a pump which is made for years of very frequent use. Your lactation consultant can help you navigate finding a pump rental vendor and talk to you about possible insurance coverage (a doctor's order may be needed).

Some techniques like "power pumping" which mimics baby's cluster feeding, might be implemented to imitate periodic "growth spurts." Your lactation consultant can share research, mothers' experiences and her professional experience with you.

If you are facing a challenge with milk production, reach out to your lactation consultant. She will share strategies and help you develop a plan for increasing your production. Herbal remedies and supplements might give a boost but will not increase milk production if there is infrequent or inadequate breast drainage or when certain physical or physiological conditions present.

STORAGE GUIDELINES

Room temperature	**16–29°C (60–85°F)**	**4 hours optimal**
		6–8 hours acceptable under very clean conditions
Refrigerator	**~4°C (39.2°F)**	**4 days optimal**
		5–8 days under very clean conditions
Freezer	**0°F (–18°C)**	**3 -6 months optimal**
		12 months acceptable in a chest freezer

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Thawing: Once frozen milk is brought to room temperature, its ability to inhibit bacterial growth is lessened. Use within 24 hours of thawing. There is little information on refreezing thawed human milk. Bacterial growth and loss of antibacterial activity will be a factor of the thawing technique, duration of the thaw, and the amount of bacteria present at the time milk was expressed. Therefore, no recommendations can be made on the refreezing of thawed human milk.

Warming human milk: Some infants may show a preference, but will usually drink milk cool, at room temperature, or warmed. To warm your milk to body temperature, warm in lukewarm water (at most 104F or 40C degrees) over 20 minutes. Even warming the milk just to 37°C (98.6F) changes solid fat to liquid or oil fat. Oil fat appears to adhere to the sides of the container, therefore lowering the fat content of the milk. To disperse this fat, you can gently rock the bottle back and forth. Do not shake it vigorously as this breaks down the fat molecules. One study compared lukewarm water warming and waterless warming and found there was no difference between them in regard to changes in fat, protein, lactoferrin, and secretory IgA.

Milk placed in hot water creates pockets of very hot milk and such overheating can damage some of the wonderful properties of your milk.

Unfinished feedings: When your baby begins drinking your milk from a bottle or cup, some bacterial contamination will occur from your baby's mouth. Due to lack of research in this area, recommendations come from related evidence. Academy of Breastfeeding Medicine states "it seems reasonable to discard the remaining milk within 1–2 hours after the infant is finished feeding." Rather than preparing a large feeding that baby might waste, some milk can be stored in various serving sizes such as 1 oz, 2 oz for when baby needs a bit extra.

SETTLING IN

Some women like the exclusive expressing method, feeling they would not be able to provide breastmilk any other way. They are content with their decision and find a happy routine.
Other women find the process challenging, but they make the commitment to their baby and to themselves. Setting short-term goals can help and sometimes feel a little less overwhelming. Possibly connecting with other pumping mothers by joining a support network may be helpful to you. Please stay in touch with your lactation consultant for information and support. We are here to support your breastfeeding goals.

REFERENCES

Breastfeeding Medicine Vol. 13, No. 1 ABM Position Statement

Academy of Breastfeeding Medicine's 2017 Position Statement on Informal Breast Milk Sharing for the Term Healthy Infant Natasha K. Sriraman, Amy E. Evans, Robert Lawrence, Lawrence Noble, and the Academy of Breastfeeding Medicine's Board of Directors

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