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### **The Art of Hand Expression**

Hand expression has been used throughout history to support nursing. This session will discuss the benefits of teaching hand expression both pre- and postnatally, review research supporting hand expression, and demonstrate several techniques for using hand expression with families.

The participant will be able to list three benefits of hand expression.

The participant will be able to demonstrate two types of hand expression.

The participant will be able to share with families when and how prenatal hand expression might be appropriate for them.

### **Rules of lactation**

Rule #1—Feed the baby: A baby who is well-fed will feed better at the breast.

Rule #2—Protect the milk supply: Milk must be removed regularly and thoroughly to keep production as high as possible.

Rule #3—Find and address the problem: After the first 2 have been covered, you can then investigate the problem and develop a strategy to address it.

### **Signs of a well-fed baby** Frequent effective feeds- At least 8 in the early weeks

- Periods of being awake, periods of sleep
- Wet and poopy diapers- Poop changes from black to brown/green to yellow/orange by day 4
- Weight gain- Lose weight through day 3-4 and then gain 1 oz (30 grams) per 24 hours until around 13 weeks.

### **Some possible advantages of learning hand expression include:**

- It's free of charge.
- In some mothers, the skin-to-skin contact (hands on breast) more quickly triggers milk ejection compared to the feel of plastic pump parts against the skin.
- For some, it feels more "natural."
- Learning this skill during pregnancy boosts breastfeeding self-confidence (Demirci et al., 2019).
- During the first few days post-birth, it may be more effective than a pump in expressing the thick, low-volume colostrum (Ohyama et al., 2010).
- It can be a back-up method when a pump malfunctions, parts are missing or lost, or its power source is unavailable.

- There are no “fit” issues.
- It’s eco-friendly with no solid waste, no special equipment, and requires no electricity or other power sources, making it ideal in emergencies.
- There is nothing to store or transport.
- Before and after expressing, the only thing that needs to be washed is the mother’s hands.

**But hand expression also has some drawbacks.**

- There is a learning curve.
- It requires physical effort and can become tiring.
- It may take more time than double pumping if hand-expressing one breast at a time.
- Hand expression alone may not yield as much milk as a double-electric pump after the first few days, which can be a problem when establishing milk production with hand expression only (Lussier et al., 2015; Ru et al., 2020; Slusher et al., 2012).
- Some mothers feel uncomfortable with the act or even the idea of hand expressing.

**When might teaching hand expression be appropriate?**

- During pregnancy
- In the first days after birth
- To relieve engorgement
- To help increase milk supply
- When a parent is returning to work
- Anytime! A skill nursing parents should be good at

**Why teach hand expression prenatally and in the first few days?**

**Perception of Low milk supply**

- (Wu et al, 2022) Systematic Review found perceived low milk supply affects six months of exclusive breastfeeding.
- Michigan 2022 Pram <https://www.michigan.gov/mdhhs/adult-child-serv/childrenfamilies/prams/reports> (the report using the words mothers and bf)
  - 90% of mothers initiated breastfeeding vs 71.0% in 2004
  - Top three reasons for stopping breastfeeding
    - “Wasn’t producing enough milk”
    - “Baby had difficulty nursing or latching”
    - “Breastmilk didn’t satisfy my baby”
- (Monge-Montero et al, 2023) Why do mothers mix milk feed their infants?
  - Concern baby is hungry/perceived BM insufficiency
- (DiTomasso et al, 2022) “Worry about weight is a significant breastfeeding barrier. It is associated with first time breastfeeding, less exclusive breastfeeding, use of artificial milk, and earlier breastfeeding cessation.”

Baby's age at weaning	Reasons Parents Gave for Weaning (%)
<12 weeks (19%)	Not enough milk/My milk alone didn't satisfy baby (91%) Trouble latching (48%) Nipple Trauma (30%)
12-26 weeks (10%)	Not enough milk/My milk alone didn't satisfy baby (79%) Trouble latching (14%) Baby lost interest (14%)
26-52 weeks (22%)	Not enough milk/My milk alone didn't satisfy baby (48%) Baby lost interest (29%) Baby biting (16%)

Adapted from Newby and Davies, 2016

- Confidence game- Oozing with confidence- Belief it is designed to work! (Sonni et al, 2023) "During the initial assessment, 77.0% of the mothers continued to breastfeed. After continuing to breastfeed for 30 days, the improvement in breast milk was 78%. The improvement in breast milk was substantially correlated with (breastfeeding) educational level." Hand expression builds confidence and self-efficacy

### Getting off to the best start: Frequent, effective milk removal and breast stimulation

- A great way to understand the curve is to think of your milk production as launching a rocket. **From Making More Milk by Diana West and Lisa Marasco Chapter 5 The Lactation Curve**
  - 1. Hormones initiate the countdown and lift-off process, and then frequent effective feedings rev up the engines further.
  - 2. Lots of good-quality nursing (or pumping) right after birth stimulates both more prolactin surges and the development of more prolactin receptors for a greater engine response.
  - So much easier to increase/improve milk production in the early days, vs in later weeks/months
- **Frequent effective milk removal is critical**
  - (Parker et al, 2021) "Frequent expression during the first 5 days postpartum may promote earlier secretory activation."
  - Are 8 always needed? Is this enough? Maybe over 10 removals per 24 hours in the first weeks?
    - (Huang and Chih, 2020) " (Group I; <10 breastfeeding episodes/day) and high-frequency breastfeeding group (Group II; >= 10 breastfeeding episodes/day. Results: Infant birth weight was higher in Group II than in Group I. On day 28 postpartum, infants in Group II ingested significantly more milk per feeding (71.6 – 4.0 mL versus 54.1 – 5.2 mL) and gained more weight from birth (142.9% – 4.5% versus 130.2% – 2.4%) compared with those in Group I. The mothers of Group II had significantly higher basal serum PRL levels (116.4 – 11.8 ng/mL versus 72.7 – 7.77 ng/mL.

Conclusions: Increase in frequency of breastfeeding (**or general milk removal!**) of over 10/day is associated with baseline PRL levels and increased milk production and weight gain.

- **Effective nursing**
  - An optimal Latch is key to optimal Milk Production  
The most essential measure of a good latch is that both of you are comfortable and that milk transfers efficiently. But...
    - Are babies always effective? Belief that a baby is always more effective than a breast pump
      - **Infant suck issues-** Effective sucking draws the milk from the breast and triggers the release of prolactin and oxytocin. A strong, healthy suck stimulates a strong prolactin surge, while a weak suck results in weak prolactin surges.
      - **What if it hurts to nurse?** One obvious symptom of a sucking problem is nipple pain when the latch otherwise “looks good.”
    - **Accurately identifying and addressing suck problems can be challenging even for lactation consultants.** There are three important steps if suck issues seem to be a problem:
      - (1) make sure the baby is latching as deeply as possible
      - (2) get enough milk into the baby in a way that supports breastfeeding while the parent work on the problem
      - (3) pump and/or **hand express** as needed to keep up the parent’s milk production.

### Learning to hand-express

- **Why hand express in the first days?**
  - Helps build confidence milk is there and increasing
  - Helps ensure a robust milk supply
  - Reduces need for formula supplementation
  - Helps prevent dehydration, low blood sugar, and high levels of jaundice
  - Engorgement- Hand expression usually gets more out than a pump before the onset of full production. Pumping can also draw fluids (edema and extra blood flow) forward, making the nipple bigger and latching even harder for the baby.
  - In practice! Hand expressing a few drops of colostrum onto a plastic spoon for someone else to offer the baby while the parent expresses into a second spoon.
  - What research supports this practice? An Italian study in which the 1760 study mothers often hand-expressed colostrum and spoon-fed it to their newborns (Bertini et al., 2015) found that none of these newborns lost more than 10% of birth weight. In a U.S. study (Flaherman et al., 2016), early excess weight loss was associated with a lack of confidence in milk

production and increased odds of weaning before 6 months. A U.S. randomized controlled trial of 68 mothers of newborns 12 to 36 hours old having latching or sucking problems (Flaherman et al., 2012) found that 96% of those randomized to the hand-expression group were still breastfeeding at 2 months compared with 73% in the breast-pump group. The mothers in the hand-expression group were also more comfortable hand expressing in front of others, as compared with those in the pumping group.

- Jane Morton suggests hand expressing after several feeds into a teaspoon to give the baby “dessert”. Dr. Jane Morton, Professor of Pediatrics Emeritus at Stanford University, is a popular proponent of learning hand expression during late pregnancy. During the baby’s first few days, after breastfeeds, she suggests hand expressing milk into a spoon and feeding baby this expressed milk as “dessert.” The purpose of this practice is to prevent common problems that put breastfeeding at risk, mentioned above. To encourage this practice, Dr. Morton created her website **firstdroplets.com**, which features free instructional videos and support for AME and hand expression in the first days after birth.

## How to hand express

**Hand expression is fairly simple to learn and gets easier with practice.**

**Follow these steps:**

- Wash hands.
- Any clean container with a wide opening can be used to collect your milk, colostrum can be expressed into a small (five ml) container or even onto a teaspoon if it will be fed to the baby immediately.
- The below are just suggestions
  - Relax and get comfortable: milk will flow more easily if with warmth and comfort.
  - Privacy can help with relaxation. Feel safe to get the oxytocin flowing!
  - Try the breathing exercises that may have learnt for use during labor.
  - Visualize flowing milk.
  - It can be easier to get milk flowing if the baby is nearby. If they are not, try thinking about them, or looking at a photo or video recording of them.
  - Skin to skin contact before hand expressing can be very helpful.
  - Keeping a piece of clothing that smells of the baby close-by helps – this may be especially helpful if the parent is separated from their baby, for example if the baby is in a Newborn Intensive Care Unit (NICU).
  - Take some deep breaths and drop the shoulders.
- Gently massage the breasts with hands and/or tapping with fingertips to stimulate milk ejection reflex (MER or ‘let-down’) – this is the key to effective expressing.
- Bending forward with so the breasts are dangling means gravity can help milk flow.
- Work on finding the “sweet spots”. Places where hand expression seems to be most effective.
- Move hand to different places on the breast to drain different areas.

- No right way! I have found putting on a video (I use Maya Bolman's 1<sup>st</sup> video here) and working with the client on hand expressing while watching the video helps.
  - Two main techniques
    - Pediatrician Jane Morton's Technique <https://firstdroplets.com/> start at 11:08 for hand expression  
Also, from Stanford University: <https://med.stanford.edu/newborns/professional-education/breastfeeding/hand-expressing-milk.html> 1:34 for hand expression
    - Lactation consultant Maya Bolman's Technique <https://bfmedneo.com/Breastfeeding-and-Lactation-Education-Resources/Videos/The-Basics-of-Breast-Massage-and-Hand-Expression-Fast-demonstration>: <https://www.facebook.com/reel/329604828065812>
    - Many others
      - Unicef: <https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/breastfeeding-resources/hand-expression-video/>
      - iBreastfeed: <https://www.youtube.com/watch?v=6ZViuYKX5LU>
      - Global Health Media: <https://www.youtube.com/watch?v=axQi5PqRZ0M>
    - Video of really effective hand expression: <https://www.youtube.com/watch?v=glug3qEQ2M4>

### What if it is not working???

- Keep calm!
- When colostrum or mature milk is not forthcoming, it may help to keep in mind that milk expression is not like turning on a faucet. Oxytocin is needed! Parents need to feel emotionally comfortable, so a relaxed environment and patience are vital. In addition to the gentle massage that is a normal part of hand-expressing, it may also help to first spend 15 minutes or more in skin-to-skin contact with the baby, which triggers oxytocin release. Warm compresses on the breasts also contribute to relaxation and oxytocin release. If engorged, the use of reverse pressure softening may make hand-expression of colostrum more effective.
- Things that seem to help
  - **Sight:** Look at the baby or a photo or video of the baby.
  - **Smell:** Sniff the baby's blanket or clothing.
  - **Touch:** Apply warmth to the breasts using wet or dry heat. Interrupt expressing several times to gently massage again.
  - **Taste:** Sip a favorite warm drink or have a snack to help relax.
  - **Hearing:** Listen to a recording of the baby cooing or crying. If the baby is not there, call and check on him, or as a distraction, call someone to chat. Access audio relaxation files, which can reduce stress and improve milk yields (Dabas et al., 2019). Listening to music can also improve milk yields and even increase milk fat content (Ak et al., 2015; Keith et al., 2012).

- **Mind/feelings:** Close the eyes, relax, and imagine the feel of skin-to-skin contact with the baby or imagine the baby breastfeeding. Think loving thoughts about the baby.
- **Deep breathing:** Close the eyes and breathe in deeply for four counts, hold the breath for four counts, release the breath for four counts, and hold the breath out for four counts. Do this four times.
- **Gentle massage and/or gentle tapping** are an essential ingredient of effective hand expression, especially as it is being learned. Any of the sensory pathways, as well as the mind and emotions (Cobo, 1993; Cowley, 2014), can help trigger milk ejections. If at first extra help is needed to trigger milk ejections, in addition to using gentle massage and compression, suggest experimenting with the strategies below to see which work best. Their effectiveness will vary from mother to mother. See Maya Bolman's video for demonstration: <https://www.mayabolman.com/videos/v/handexpression>

### What if the parent is really struggling with hand expression?

- Some mothers and other nursing parents let down their milk easily to hand expression and pumping, while others find it more challenging. For a tiny minority, it may seem impossible. When mothers try all of the previous tips and still struggle to express any milk, one nearly sure-fire strategy is for the baby to stimulate milk ejection by breastfeeding while the mother expresses from the other breast. An older baby may need little help. With a younger baby, some mothers hand-express with their free hand, using pillows to help support the baby's weight at the other breast. Others use either a hands-free pump or one that can be operated with one hand. Expressing while the baby nurses can help condition a mother's body to the feel of the expression method, so that with practice milk ejections will happen even when the baby is not nursing.
- With practice, a mother may be able to hand express while the baby breastfeeds or express both breasts at the same time. To hand-express milk while baby is breastfeeding, some mothers use pillows or cushions to support the baby's body, so they have both hands free. Some learn to hand-express milk from both breasts simultaneously, with the right hand expressing the right breast and the left hand expressing the left breast, with collection containers on a stable surface just below nipple level.

### Hand expression to help increase low milk supply

- Can be done quickly, frequently with no special equipment
- Works really well for a breast that has low volume- There is less pressure is in the breast to help push milk out so the hands can help

### Hand expression near the end of pregnancy.

- Why prenatal or antenatal hand expression?
  - Learning to hand express milk during the **last few weeks** of a low-risk pregnancy is becoming increasingly common (O'Sullivan & Ihlein, 2025). Free educational

hand-expression videos for parents are available on **firstdroplets.com**, the website of U.S. pediatrician Jane Morton.

- Free
- First used for diabetic mothers who wanted their baby's first feeds to be their milk
- Builds confidence
- Better short-term breastfeeding outcomes
- Some research suggests better long-term breastfeeding outcomes
- Already have skill when baby is born

#### First research on prenatal hand expression for use in diabetic mothers:

- Sue Cox  
<https://pdfs.semanticscholar.org/3a38/f55c1e8abdcc95dbe5e916a56cb1363d33ef.pdf>
  - Forster et al, 2017 <https://pubmed.ncbi.nlm.nih.gov/28589894/>
  - Casey et al, 2019  
[https://bmjopen.bmj.com/content/9/1/e021513?\\_cf\\_chl\\_jschl\\_tk\\_=2f72c3aa2524077975284971c3b19c325f5f3bfb-1614956238-0-AaiOWWWK6WsdMUEUrZICRUATTgdyiWPuRRCiET82HCs5otoypHM17ekpvXcbcXK8g6lopv7bSQvTJE-tc\\_xOKxHt83QGtvOjhqZ0e21Ln96ED4oWPYk9Hj7eS9kEhVVUTd8eLNXHcdfAlB8Hzlho7GOa-AI8m6tuC7KPQNZ8c0rV0m\\_HoUdo93lr8etOoDCQENiZHiGtwh2dX5SmvTimtPqfDiKy6N7O5DEwscgAWmFEJTVKv30UzKDEoDKuRbVTi-uK-QLx2p9BnPORV2iUH5fgFxyAD1T9doclXygAd3MJSBLtTtAyA4S4AIWWG bS238nBUSv-2USFswgVgqx1KLn83gFv7tNigWzWf7668n](https://bmjopen.bmj.com/content/9/1/e021513?_cf_chl_jschl_tk_=2f72c3aa2524077975284971c3b19c325f5f3bfb-1614956238-0-AaiOWWWK6WsdMUEUrZICRUATTgdyiWPuRRCiET82HCs5otoypHM17ekpvXcbcXK8g6lopv7bSQvTJE-tc_xOKxHt83QGtvOjhqZ0e21Ln96ED4oWPYk9Hj7eS9kEhVVUTd8eLNXHcdfAlB8Hzlho7GOa-AI8m6tuC7KPQNZ8c0rV0m_HoUdo93lr8etOoDCQENiZHiGtwh2dX5SmvTimtPqfDiKy6N7O5DEwscgAWmFEJTVKv30UzKDEoDKuRbVTi-uK-QLx2p9BnPORV2iUH5fgFxyAD1T9doclXygAd3MJSBLtTtAyA4S4AIWWG bS238nBUSv-2USFswgVgqx1KLn83gFv7tNigWzWf7668n)
  - Demirci et al, 2019  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6859991/>
  - <https://www.laleche.org.uk/antenatal-expression-of-colostrum/>
  - <https://abm.me.uk/breastfeeding-information/antenatal-expression-colostrum/>
- Thoughts on prenatal or antenatal hand expression
    - Research on hand expression during late pregnancy, often referred to as antenatal milk expression or prenatal or antenatal expression, began in the 1940s (O'Sullivan & Ihlein, 2025).
    - However, at this writing, no major health organizations offer guidelines on this practice and many healthcare providers are unfamiliar with it. For this reason, many mothers resort to learning about it online (Juntereal & Spatz, 2021b).
    - Learning prenatal or antenatal expression gives mothers and other nursing parents more control over their comfort and ready access to their milk. Reviews of the research on prenatal or antenatal expression (Ablett et al., 2023; Juntereal & Spatz, 2021a) suggest that learning this skill leads to better short-term

breastfeeding outcomes. Some (but not all) studies suggest it has longer-lasting positive effects on lactation.

- **Safety of prenatal or antenatal expression.** One common concern about prenatal or antenatal expression is whether the hormones of milk expression trigger early labor.
  - An Australian randomized controlled trial of 635 diabetic mothers who expressed and stored milk beginning at 36 weeks (Forster et al., 2017) known as the DAME study, found that pregnancy outcomes were the same in both groups. They concluded that hand expression is a safe practice if done near the end of an uncomplicated pregnancy.
  - Mothers with diabetes typically experience a 24-hour delay of milk increase after birth, so they are a logical group to express and store milk before birth in case their newborn needs to be supplemented.
  - Other studies confirmed the safety of prenatal or antenatal expression for mothers without diabetes (Chen et al., 2023; Demirci et al., 2022; Zaman et al., 2024).
  - **Keep in mind that both milk expression and breastfeeding during pregnancy should be considered safe whenever a pregnant mother's healthcare provider considers it safe to have sex, which releases the same hormones as milk expression. If hand expressing brings on contractions, they should stop and consult with their health care provider.**
  
- **Prenatal or antenatal education and short-term breastfeeding outcomes.** While research results are conflicting, multiple studies find that learning prenatal or antenatal expression during pregnancy:
  - Increases rates of breastfeeding initiation (Chen et al., 2023; Connolly & Reinkowsky, 2019)
  - Increases mothers' confidence in their ability to breastfeed and produce enough milk for their baby while demystifying milk-production dynamics (Brisbane & Giglia, 2015; Casey et al., 2019; Demirci et al., 2019; Demirci et al., 2022; Fair et al., 2018)
  - Decreases formula use during the hospital stay (Casey et al., 2019; Demirci et al., 2019; Forster et al., 2017; Moorhead et al., 2022)
  - Other factors, too, affect formula use in the hospital. A U.S. pilot prenatal or antenatal expression randomized controlled trial of 45 first-time mothers (Demirci et al., 2019; Demirci et al., 2022) noted that inadequate hospital milk-storage options and unsupportive hospital policies and staff resulted in similarly high formula supplementation rates (>30%) in both the prenatal or antenatal expression and control groups.
  - Some prenatal or antenatal expression mothers brought their frozen milk to the hospital but were discouraged from using it, with staff insisting on feeding their

babies formula instead.

- Some babies in the prenatal or antenatal expression group who were admitted to the NICU were fed more milk than biologically appropriate, so their mothers' stored milk was deemed insufficient and they were also fed formula.
- **Prenatal or antenatal education and long-term breastfeeding outcomes.** Research is conflicting on whether learning prenatal or antenatal expression increases breastfeeding exclusivity and duration after the hospital stay.
  - One systematic review of 22 studies (Ablett et al., 2023) concluded that in women with diabetes, prenatal or antenatal expression education is linked to more exclusive breastfeeding for up to 3 months.
  - Another literature review (Glavey & Fallon, 2022) noted that in many studies reporting better long-term breastfeeding outcomes, these differences are not statistically significant.
  - A 2024 observational study of 178 mothers in rural Texas (Zaman et al., 2024) found that teaching prenatal or antenatal expression increased breastfeeding exclusivity and duration, with breastfeeding rates 1.18 times higher at 3 month, 7 times higher at 6 months, and 4 times higher at 12 months.
  - A 2024 randomized controlled trial of 570 mothers with diabetes (Moorhead, Amir, et al., 2024) found that after telephone follow-up at 12 to 13 weeks, there was no difference in exclusive breastfeeding rates between the prenatal or antenatal expression and non- prenatal or antenatal expression groups.
- **What prenatal or antenatal hand expression will not do.**
  - Increase how fast milk production increases
    - Initial research finds no link between hand expression in late pregnancy and faster milk increase after birth. Some mothers hear anecdotal accounts of prenatal or antenatal expression leading to an earlier increase in milk production (secretory activation) after birth (Demirci et al., 2022). At this writing, research found no difference in timing of secretory activation among mothers receiving AME education when compared to control mothers.
    - A 2024 Australian study compared the full data on secretory activation in mothers with and without diabetes, using mothers' perception of milk increase as the basis (Moorhead, Forster, et al., 2024) and found no impact of prenatal or antenatal expression on timing of secretory activation. Using human-milk biomarkers and pumped milk volumes as a basis, a 2025 U.S. prospective, longitudinal exploratory study (Juntereal et al., 2025) examined the timing of secretory activation in 16 women pregnant with a baby with a congenital anomaly who would not be directly breastfeeding at birth. These researchers concluded that AME did not hasten milk increase after birth.

- **Better than a breast pump!**
  - Using a breast pump in late pregnancy—rather than hand expression—has no measurable effect on exclusive breastfeeding or formula use during the hospital stay. Using a breast pump is very different from learning the skill of hand expression, which allows a mother to easily express a little milk to encourage latching or to relieve breast fullness.
  - A 2023 U.S. randomized controlled trial of 304 mothers (Estafanous et al., 2023) concluded that pumping colostrum during and after pregnancy (unlike hand expression) had no effect on either exclusive breastfeeding or formula use during the hospital stay.
  
- **Feelings about prenatal or antenatal hand expression**
  - How mothers feel about hand expression during pregnancy depends in part on any reservations they had about the practice and how much milk they express. Many mothers approach breastfeeding with low confidence and concerns about both low milk volume and pain.
  - Mothers in the DAME study who learned hand expression during pregnancy reported positive and negative feelings, from confidence, achievement, a sense of control, and empowerment to feelings of discomfort, pain, embarrassment, and fear (Moorhead et al., 2022). Those wanting to avoid formula use during birth hospitalization considered their milk precious and a source of security for their baby’s health, which contributed to feelings that they were a good, protective mother. If their milk was not used in the hospital or they felt the staff devalued its importance to their baby, they felt frustrated and disappointed.
  - Reported challenges included:
    - Difficulty finding time to hand express, especially among those with daily tasks relating to controlling diabetes
    - Tensions with family members who disapproved
    - Uncertainty about their skill with the technique

**Pregnant mother with gestational diabetes with reservations about prenatal or antenatal expression.**

- A 2024 U.S. study followed 103 pregnant mothers with gestational diabetes or pregestational diabetes by surveying them about their knowledge and attitudes regarding AME before they began practicing it and again after their babies were born (Mess et al., 2024). The researchers found significant differences among those with and without prenatal or antenatal expression reservations in terms of perception of pain and volume of colostrum expressed. Those with reservations had concerns about prenatal or antenatal expression triggering early labor and finding prenatal or antenatal expression difficult to do.
- Mothers with prenatal or antenatal expression reservations reported significantly higher

pain scores during prenatal or antenatal expression. The mothers without reservations expressed nearly 3 times the volume of milk compared with those with reservations. In the post-survey after birth, both groups felt positively about their experiences with prenatal or antenatal expression and said they would definitely do it again. The researchers noted that mothers with reservations may need more support before birth.

### **What prenatal or antenatal hand expression might look like?**

- Before birth, learning the skill of hand expression is the top priority, as milk storage is not necessary for every mother.
- If a mother or other nursing parent is at risk for a delay in milk increase (secretory activation) after birth, for example mothers with diabetes, storing their milk before delivery to avoid formula use in the hospital may make sense.
- For low-risk mothers, however, learning to hand-express milk effectively during pregnancy is more important than milk storage. If mothers know how to effectively hand express at birth, they can express some extra milk into a spoon after breastfeeding to prevent common problems (see the last point in this section).
- When and how often to hand express during pregnancy vary by practitioner and study. A scoping review of the prenatal or antenatal expression literature (Foudil-Bey et al., 2021) noted inconsistencies among the studies on when to start prenatal or antenatal expression, how often and how long to practice it, and even what specific techniques to use.
- If mothers plan to bring frozen expressed milk to their birthing facility, suggest checking before delivery on whether any policies are in place for the storage and use of milk frozen at home. Expressing and storing milk during pregnancy is a time-consuming task.
- Several studies reported that when mothers brought their frozen milk to the hospital, if no policies were in place, they were told their milk could not be used and their baby was supplemented with formula (Demirci et al., 2023). In some cases, the mothers' frozen milk was treated carelessly by staff and became unusable as a result (Moorhead et al., 2022).
- For this reason, suggest before mothers begin storing their milk during pregnancy they check with their birthing facility to find out if it can be used after birth and how it should be stored.

### **Returning to work and hand expression.**

- More likely to have a situation when a pump or a baby is not available.
- Can be done quickly if time is an issue.
- Can be done with only hands, no other equipment is necessary.

## Conclusion

### When might teaching hand expression be appropriate?

- During pregnancy
- In the first days after birth
- To relieve engorgement
- To help increase milk supply
- When a parent is returning to work
- Anytime! A skill nursing parents should be good at

Hand expression is a life skill. It builds confidence, milk supply, and gives easy access to human milk. Again, you never know when you might have very full breasts and no baby or pump.

Thank you!

Useful general hand expression resources

<https://lila.org/news/the-power-of-hand-expression/>

<https://laleche.org.uk/hand-expression-of-breastmilk/>

### References for the Art of Hand Expression

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