

# Protocol #5

## Engorgement



# Protocol #5: Engorgement

*Engorgement may have one or more underlying causes that may be mother or baby related.*

## Observation and Assessment

Breast fullness may sometimes be confused with engorgement. Breast fullness differs from engorgement in the following ways:

<p><b>Breast Fullness (a normal condition)</b></p> <p><i>Assess the mother for:</i></p> <ul style="list-style-type: none"><li>• Breast fullness, heaviness, and some tenderness that begins when the breast milk volume increases 2–4 days after birth.</li><li>• Breasts that feel soft when pressed (compressible).</li><li>• Absence of breast pain or fever.</li></ul>	<p><b>Breast Engorgement (an abnormal condition)</b></p> <p><i>Assess the mother for:</i></p> <ul style="list-style-type: none"><li>• Breasts and/or areolae that feel hard beginning 3–6 days after birth or at other times when a mother’s breasts are not effectively emptied.</li><li>• Breasts that are not compressible.</li><li>• Generalized breast tightness and pain.</li><li>• Breasts that appear flushed.</li><li>• A low-grade fever.</li><li>• Hands and arms that may be numb and tingling if engorgement is severe.</li></ul> <p><i>Assess the baby for:</i></p> <ul style="list-style-type: none"><li>• Breast refusal or difficulty achieving a latch (<i>Protocol #9: Breast Refusal or Difficulty Achieving or Maintaining a Latch</i>).</li></ul>
--	---

## Possible Contributing Factors or Causes

Engorgement may have one or more underlying causes that may be mother and/or baby related.

### *Assess the mother for:*

- Poor positioning and latching techniques (*Protocol #2: Positioning and Latching*).
- Use of supplements and pacifiers.
- Restricting the frequency and length of breastfeedings. Temporarily stopping breastfeeding without expressing for the missed breastfeedings – including separation of mother and baby.
- Weaning abruptly.

- Underlying abnormal breast pathology, e.g., non-patent breast milk ducts.
- Stress.
- Fatigue.

### *Assess the baby for:*

- Ineffective suck (*Protocol #10: Ineffective Suck*).
- Medical conditions, e.g., jaundice.
- Use of pacifiers (*Protocol #1: The Initiation of Breastfeeding*).

## Suggestions

*“The best management of engorgement is prevention.” (Lawrence, 2011)*

1. Determine the possible cause(s) of the engorgement (see previous section on “Possible Causes”).

- Assess first for ineffective positioning and latching (*Protocol #2: Positioning and Latching*).
- Assess for infrequent or delayed breastfeedings.
- For an ineffective suck, refer to *Protocol #10: Ineffective Suck*.

2. Provide the mother with suggestions for breastfeeding with engorged breasts.

***Before breastfeeding, encourage the mother to:***

- Breastfeed early, frequently, and without restriction to promote optimal breast milk removal.
- Hold her baby skin-to-skin frequently.
- Soften the areola and ensure that the letdown or breast milk ejection reflex is initiated. The baby’s rooting, sucking and hand movements on the mother’s breast are the natural stimuli for letdown when breastfeeding is initiated early and the baby is calm, before the baby gets overly hungry and begins crying (*Protocol #3: Signs of Effective Breastfeeding*).

A mother can try the following ideas to initiate letdown:

- Breastfeed in a quiet, relaxed place.
- Use relaxation strategies – such as a warm shower, heat applied to the mother’s back and shoulders, relaxation breathing, a warm drink, supportive positions.
- Manage pain to support comfort and relaxation and facilitate breast milk letdown.
- Initiate breastfeeding before the baby is stressed and crying.
- Clothe the baby in a diaper only to promote skin-to-skin contact.
- Support the baby’s head higher than tummy in a chest-to-chest position, with nose approaching the mother’s nipple to facilitate the normal neonatal reflexes and self-attachment behaviours.
- Gently massage her breasts.
- Stimulate her nipples. Gently roll her nipples between the thumb and index finger for several minutes or until the letdown reflex occurs and breast milk leaks.

- Express some breast milk (*Protocol #19: Expressing and Storing Breast Milk*).
- Apply heat to her back or shoulders for a few minutes before or during massage until letdown occurs. Some mothers may wish to apply heat to their breasts – see discussion regarding application of heat for engorgement in *General Principles*. Moist or dry heat may be applied with a warm, wet towel or disposable diaper, a warm bath or shower, a bowl of warm water, a heating pad on low, or a water bottle wrapped in a cloth.

Or alternatively, some women prefer to:

- Apply a cool cloth to their breasts for a few minutes. Try cold compresses or diapers, gel packs, frozen wet towels or frozen vegetable packs, wrapped in a cloth. Limit direct exposure to cold to prevent tissue trauma such as frostbite.

***During breastfeeding, encourage the mother to:***

- Assess that the baby is effectively positioned and latched (*Protocol #2: Positioning and Latching*).
- Assess that the baby is effectively sucking and swallowing (*Protocol #3: Signs of Effective Breastfeeding*).
- Use breast compressions during breastfeeding if the baby is not effectively sucking and swallowing or if her breast is not softening. Breast compressions will increase the breast milk transfer and encourage the baby to suck effectively.

***To use breast compression, encourage the mother to:***

- Support the base or middle of her breast using the “C” or “U” hold (see diagram).
- Compress her breast when the baby’s sucking becomes less effective, e.g., no more “deep and slow” sucks (*Protocol #3: Signs of Effective Breastfeeding*).
- Hold the compression but do not press so hard that it hurts.
- Release the compression when the baby pauses and swallows or is no longer effectively sucking, e.g., no more “deep and slow” sucks. Most babies will stop sucking completely when the compression is released and will resume sucking again shortly.
- If the baby does not resume effective sucking, wait a while before compressing again.
- Rotate the position of her hand on all areas of her

breast to ensure that all of the breast milk ducts are compressed.

- Continue with breast compressions until the baby is no longer sucking effectively when her breast is being compressed.
- Offer the other breast using breast compression as needed.



### Breast Compression Using the “C” Hold

#### *After breastfeeding, encourage the mother to:*

- Express some breast milk for comfort if her breasts are still hard and full, even if the baby has breastfed effectively and is satisfied. Both breasts should feel significantly softer after breastfeeding and/or breast milk expression (*Protocol #19: Expressing and Storing Breast Milk*).
- Apply cold to the softened breasts for a few minutes after breastfeeding to provide comfort and reduce swelling. Limit direct exposure to cold to avoid tissue trauma such as frostbite. Try one of the following methods:
  - A cool wet towel or cloth.
  - A cold gel pack wrapped in a dry towel.

#### *Another practice sometimes suggested when optimal breastfeeding management isn't enough:*

- Cabbage Leaves – Some mothers find the use of green cabbage leaves to be helpful for increasing their comfort and reducing engorgement. Caution: This has not been scientifically proven. In addition, due to the possible risk of listeriosis, this may not be an appropriate option for mothers or infants

who are immunocompromised (see notes below in *General Principles*). If cabbage leaves are being used:

- Wash hands well before and after handling cabbage leaves.
- Separate raw, green\* cabbage leaves and rinse well with running, drinkable water.
- Slice off any large veins and cut a hole for the mother's nipple.
- Place the leaves directly on her breasts (not her nipples), and wear them inside a bra.
- When the leaves wilt, usually between 2–4 hours, replace them with fresh leaves.
- Discontinue using the leaves once the engorgement is relieved. Overuse may decrease the breast milk supply. Many mothers report some relief from engorgement within 8 hours of application.

\* Green cabbage is suggested because purple cabbage leaves can stain skin and clothing.

#### **Strategies to prevent engorgement:**

- Observe the baby for early feeding cues to be able to breastfeed early and frequently:
  - when the baby is showing early feeding cues, e.g., rapid eye movements under the eyelids as the baby begins to wake, sucking/licking, hands to mouth, increased body movements, and making small sounds.
  - before the baby is overly hungry or crying.
  - when the mother's breasts become uncomfortable or full.
  - at least 8 times in 24 hours, including overnight, until her breasts are no longer engorged.
- Wear a supportive and well-fitting bra. Avoid bras with underwires.
- Use analgesics as needed, e.g., acetaminophen, ibuprofen. To inquire about the use of acetylsalicylic acid, i.e., aspirin, consult the *Motherisk* program at 416-813-6780, or a breastfeeding expert or breastfeeding clinic. The mother may review information online from *Motherisk* at: <http://www.motherisk.org/women/breastfeeding.jsp>.
- Feed the baby only breast milk. Avoid supplementation unless medically indicated (*Protocol #17: Indications for Supplementation or*

*Cessation of Breastfeeding).*

- Avoid the use of pacifiers and bottles.

***If the baby is unable to breastfeed effectively, encourage the mother to:***

- Gently express each breast, until her breasts are soft, each time the baby has been unable to breastfeed effectively. Hand expression is suggested as the mother is less likely to remove enough breast milk to trigger increased breast milk production. If breastfeeding is stopped for any length of time the mother will need to express each breast 8 times or more in 24 hours, including overnight, as long as her breasts are engorged.

The mother should also express if her breasts become uncomfortable or full (*Protocol #19: Expressing and Storing Breast Milk*).

- Soften the areolae before breastfeeding and initiate the letdown reflex by using one of the following techniques:
  - Gently massage her breasts while applying wet or dry heat to the back or shoulders until the letdown reflex occurs. Some mothers may wish to apply heat to their breasts.
    - Wet or dry heat includes a warm, wet towel or disposable diaper, a warm bath or shower, a bowl of warm water, a heating pad, or a hot water bottle. Then, gently express some breast milk until the areolae are soft (*Protocol #19: Expressing and Storing Breast Milk*).
  - Gently roll her nipples between her index finger and thumb for a few minutes or until the letdown reflex occurs. Then gently express some breast milk until the areolae are soft (*Protocol #19: Expressing and Storing Breast Milk*).
- If necessary, feed the baby with the expressed breast milk using an alternative feeding method, e.g., cup, spoon, syringe, finger feeding (*Protocol #18: Alternative Feeding Methods*). If expressed breast milk is not available then an appropriate supplement should be offered (*Protocol #17: Indications for Supplementation or Cessation of Breastfeeding*).
- Referral to a breastfeeding expert or breastfeeding clinic for further assessment as soon as possible is recommended.

## General Principles

**Prevention** is key to managing engorgement. Fundamental to preventing engorgement is:

- Early initiation of breastfeeding.
- Frequent and unrestricted breastfeeding.
- Effective removal of breast milk from the mother's breasts.
- Effective positioning and latching practices.
- Not supplementing unless medically indicated.

**Breast Fullness** – Breast fullness is part of the normal physiological process of breast milk production. The mother's breasts usually become fuller between the second to fourth day after birth. A normal full breast will feel heavier and warmer, and may be uncomfortable. For most women this is a reassuring sign that their "milk has come in". Breast fullness does not interfere with breastfeeding.

Breast fullness normally occurs during the initial period of rapid breast milk production. It is due to increased vascular supply and postpartum hormonal shifts following the removal of the placenta (see *How the Breast Works* regarding Lactogenesis II). It will gradually decrease within 2–3 weeks when the baby is breastfeeding well. When breast fullness subsides, the mother's breasts will continue to produce plenty of breast milk despite feeling much softer and flatter. If the mother's breasts are not adequately and regularly emptied, breast fullness can lead to engorgement at any time during lactation.

**Breast Engorgement** – Breast engorgement is considered to be abnormal in this resource; the mother's breasts become overfull due to failure to remove breast milk effectively or frequently enough (Lauwers et al., 2011). There may be a range of difficulties or pathology in the physiological process. Giuliani identifies three basic components of breast engorgement: accumulation of breast milk, congestion caused by increased vascularization, and edema caused by congestion and obstruction of lymphatic drainage (Giuliani, 2004). The engorged breast feels hot, tender, swollen, and painful. Engorgement may be the result of the mismanagement of breastfeeding and may be a reason for early weaning (Riordan, 2010) (*Protocol #1: The Initiation of Breastfeeding*).

For some women, the production of breast milk may initially exceed the infant's requirements. Engorgement is a result of increased breast milk stasis together with increased blood flow to the mother's breasts. If the excess breast milk is not removed, the alveolar space may become over-distended, exerting pressure on the surrounding tissues, impeding lymph fluid drainage and leading to edema. Engorgement may be areolar engorgement, involving only the areola, and/or peripheral engorgement, involving the surrounding breast tissue, possibly including the ducts located in the axilla. Mothers with smaller breasts have less storage capacity (Daly & Hartmann, 1995) and have been observed to experience greater frequency of engorgement (Robson, 1990). This does not impede their ability to breastfeed successfully when managed effectively.

Engorgement can make it difficult for the baby to latch on the mother's breast, especially if the areola is hard and non-compressible. Unrelieved engorgement may cause mother's breast milk supply to decrease.

Poorly managed engorgement may lead to complications such as:

- difficulty with latching
- sore nipples
- decreased breast milk intake by baby
- decreased breast milk supply
- breast milk-producing cells (alveoli) being destroyed
- breast milk stasis
- plugged ducts
- mastitis, and
- decreased maternal motivation to continue breastfeeding related to pain.

**Patterns of Engorgement** – The experience of breast engorgement is not the same for every breastfeeding woman (Humenuik et al., 1994). It may be mild, or it may be severe. It may peak early or as late as Day 14 postpartum; it may also occur at a later time due to missed breastfeedings or weaning too abruptly. There may be a single peak or multiple peaks. Humenuik et al. (1994) identified four patterns of early engorgement, the most common being a gradual intense peak followed by a gradual cessation of engorgement. For multiparas it may occur earlier, for shorter periods, and with less intensity because their “milk comes in” earlier (Lawrence, 2011).

As a result of short hospital stays, most women will experience breast fullness or engorgement after they have left the hospital. Anticipatory guidance is essential and should include education about the physiology and the patterns of engorgement as well as information about how to access breastfeeding support after they leave the hospital.

Women who have had birth interventions, including a caesarean delivery, may have a delay in initiation of breastfeeding (TPH, 2010). As a result, they may experience engorgement one to two days later than for a vaginal birth, particularly if there has been a delay in initiation of breastfeeding.

**Research Challenges** – It is difficult to conduct conclusive scientific research related to engorgement because engorgement will spontaneously resolve as women continue to breastfeed no matter what treatment, if any, is tried (Mangesi et al., 2010). A Cochrane systematic review in 2010 found insufficient evidence to recommend widespread implementation of interventions to treat engorgement. In addition, methodological limitations in the existing research have led to a high risk of bias in the results (Mangesi et al., 2010). The limited number of studies not only meant that the Cochrane review was unable to carry out a meta-analysis, it also meant that several of the studies frequently cited were dated, including some doctoral theses that have not been published in peer review journals (Robson, 1990; Sandberg, 1998).

**When Optimal Breastfeeding Management Isn't Enough** – In addition to optimal breastfeeding management – frequent breastfeeding and breast milk removal, effective positioning and latching, as well as gentle breast massage – breastfeeding mothers may try and/or breastfeeding experts may suggest a variety of other strategies. The 2010 Cochrane systematic review found that in interventions such as ultrasound, cabbage leaves, and oxytocin, there was no statistically significant evidence that the interventions were associated with more rapid resolution of symptoms; symptoms tended to improve with or without the intervention. In addition, the review did not find evidence strong enough to recommend the use of acupuncture, although some women's symptoms improved after acupuncture.

#### **Heat vs. Cold**

- **Heat** applied to engorged breasts has long been used by breastfeeding women to promote letdown and comfort, although concerns have arisen that

the application of heat to the mother's breasts may increase vasocongestion. Robson reported that mothers complained that heat worsened symptoms, causing throbbing and a greater feeling of fullness (Robson, 1990). The Cochrane review does suggest that warm compresses be applied to the engorged breast (Mangesi et al., 2010). Heat may also be applied to the mother's back or shoulders to promote relaxation, comfort, and letdown.

- **Cold** may be applied to engorged breasts to decrease local edema and enhance venous and lymphatic drainage, as well as provide comfort. Although the current evidence is not definitive, the Cochrane review suggested that cold packs may be soothing for some women, and that application of cold does not cause harm and may be associated with symptom improvement (Mangesi et al., 2010). Despite a lack of statistical significance, the evidence continues to suggest clinical benefits. Mothers should protect their skin from direct exposure to extreme cold.

As many women report comfort after applying cold and/or warmth for engorgement, these can be reasonable strategies to suggest provided that they are used conservatively and safely. It is important to prevent tissue trauma or negative physiological effects, such as increased congestion and swelling from too much heat, or possible tissue trauma such as frostbite, or impeding letdown with application of too much cold.

To avoid direct exposure to hot and cold, use a layer of fabric between the skin and the source of cold or heat. To prevent tissue trauma, limit the application time so that the skin does not redden. Some practitioners continue to suggest the application of heat before breastfeeding and cold immediately afterward for relief (Riordan, 2010).

**Expression/Pumping** – If a mother is expressing breast milk from her breasts (by hand or pump) because she is uncomfortable or the baby has not removed enough breast milk, it is important that she understands that she should remove only enough breast milk to feel comfortable. The mother should not drain her breasts, because it may further stimulate the production of breast milk and possibly increase the engorgement symptoms (*Protocol #19: Expressing and Storing Breast Milk*).

**Cabbage Leaves** – The application of cabbage leaves to the mother's breasts between breastfeedings to reduce engorgement is another strategy that has been used by

some breastfeeding women but for which the evidence of effectiveness is inconclusive due to methodological limitations. The Cochrane review found no statistically significant evidence that the use of cabbage leaves was associated with a more rapid resolution of engorgement symptoms (Mangesi et al., 2010).

Despite this, many women find the application of cabbage leaves to be soothing. It is not necessary to chill cabbage leaves (Roberts et al., 1995). Mothers should be informed that their breasts might smell or taste like cooked cabbage.

**Caution:** Safety is an issue. Bacteria such as **listeria** have been identified on many vegetables including raw cabbage (Heisick et al., 1989). Listeriosis can be a very serious disease for pregnant women, newborns, and immunocompromised individuals. Although application to the skin does not have the same risk as ingestion, it is reasonable to suggest that cabbage leaves should not be applied to nipples or breasts with lesions, nor used by mothers with immunocompromised infants, including premature babies.

For all applications, it is essential to:

- Thoroughly wash cabbage leaves in cold, running, drinkable water.
- Wash hands before and after handling cabbage leaves.
- Clean all utensils, cutting boards, and work surfaces with a 10% bleach solution before and after use.

(Source: Adapted from Health Canada, 2008 and 2009)

**Saline Soaks** – Some practitioners may suggest that a mother soak her breasts in a mild saline solution, or soak in an Epsom salt bath. Although no specific research could be found to support the effectiveness of this practice, it is unlikely to be harmful as long as the baby is not swallowing the solution. Magnesium sulphate treatments are rated as L1 by Hale (2010).

**Promoting Areolar Grasp “Reverse Pressure Softening”** – For most women, the gentle massage and expression described above in “Suggestions” are enough to soften an engorged areola. If these do not reduce the areolar edema, it may help to try “reverse pressure softening”, as described by Cotterman (2004). Gentle positive pressure is applied by placing the fingertips around the base of the mother's nipple to create a ring of “dimples”. This can temporarily reduce edema by moving some swelling slightly

backward and upward into the breast, softening the areola enough to permit effective latching. It is best done with fingernails trimmed short and immediately before breastfeeding.

**Cultural Practices** – It is important to acknowledge that some cultures traditionally avoid practices such as “cold” during the postpartum period. Having a conversation with the mother about traditional and cultural practices and exploring their significance for

her can facilitate an informed decision. It creates an opportunity to offer accurate information about how the possible benefits and risks of traditional practices may impact her breastfeeding success. Some women may feel that certain practices are not an option, and for others an explanation of the rationale may lead to the possibility of trying a different treatment.

**Prevention** – All findings emphasize that prevention of engorgement should remain the key priority.

## References

- Cotterman, K.J. (2004). Reverse pressure softening: A simple tool to prepare areola for easier latching during engorgement. *Journal of Human Lactation*, 20(2), 227–237.
- Daly, S.E., Hartmann, P.E. (1995). Infant demand and milk supply Part 2: The short term control of milk synthesis in lactating women. *Journal of Human Lactation*, 11(1), 27–37.
- Giuliani, E.R.J. (2004). Common problems during lactation and their management. *Jornal de Pediatria*, 80(5), Suppl.: S147–S154.
- Hale, T.W. (2010). *Medications and mothers' milk*. (14th ed.) Amarillo (TX): Hale Publishing.
- Heisick, J.E., Wagner, D.E., Nierman, M.L., Feeler, J.T. (1989). Listeria spp. found on fresh market produce. *Applied and Environmental Microbiology*, 55(8), 1925–1927.
- Health Canada. (2008). Listeria and food safety. Electronic copy retrieved 2011 from: <http://www.cmc-cvc.com/english/documents/listeria-eng.pdf>.
- Health Canada. (2009). Safe handling of fresh fruits and vegetables. Electronic copy retrieved (2013) from: <http://www.wwhs-sc.gc.ca/hl-vs/ivh-vsv/food-ailment/handling-man.pulation-eng.php>.
- Humeniuk, S.S., Hill, P.D., Anderson, M.A. (1994). Breast engorgement: Patterns and selected outcomes. *Journal of Human Lactation*, 10(2), 87–93.
- Lauwers, J., Swisher, A. (2005). *Counseling the nursing mother: A lactation consultant's guide*. (4th ed.) Sudbury (MA): 321–325.
- Lauwers, J., Swisher, A. (2011). *Counseling the nursing mother: A lactation consultant's guide*. (5th ed.) Sudbury (MA): Jones & Bartlett, 393–397.
- Lawrence, R.A., Lawrence, R.M. (2011). *Breastfeeding: A guide for the medical profession*. Philadelphia (PA): Elsevier Mosby, 249–252.
- Mangesi, L., Dowswell, T. (2010). Treatments for breast engorgement during lactation. *Cochrane Database of Systematic Reviews*, (9), CD006946. DOI: 10.1002/14651858.CD006946.pub2
- Riordan, J., Waumbach, K. (2010). *Breastfeeding and human lactation*. (4th ed.) Sudbury (MA): Jones & Bartlett, 239–240.
- Roberts, K.L. (1995). A comparison of chilled cabbage leaves and chilled gelpaks in reducing breast engorgement. *Journal of Human Lactation*, 11(1), 17–20.
- Roberts, K.L., Reiter, M., Schuster, D. (1995). A comparison of chilled and room temperature cabbage leaves in treating breast engorgement. *Journal of Human Lactation*, 11(4), 191–194.
- Robson, B.A. (1990). Breast engorgement in breastfeeding mothers [PhD thesis], Case Western Reserve University, 1990.
- Rowe-Murray, H.J., Fisher, J.R.W. (2002). Baby friendly hospital practices: Caesarean section is a persistent barrier to early initiation of breastfeeding. *Birth*, 29(2), 124–131.
- Sandberg, C.A. (1998). Cold therapy for breast engorgement in new mothers who are breastfeeding. St. Paul (MN): The College of St. Catherine.