BREASTFEEDING PROTOCOL #5:

# Engorgement

Toronto Public Health

# Background

In 2018, a partnership was formed with the Baby-Friendly Initiative (BFI) Strategy for Ontario and Toronto East Health Network (TEHN) to update and revise the Breastfeeding (BF) Protocols for Health Care Providers to create a current and evidence informed resource. With the support of partner organizations and service providers, five BF Protocols were revised and released in 2019 and early 2020. This project was then paused due to the COVID-19 Pandemic.

In 2024, TPH resumed work on the protocols independently with acknowledgement from TEHN. TPH has reviewed and updated protocol content and references based on current breastfeeding resource information. Resources used in this review include Government references, breastfeeding texts, medication use during lactation guides and websites, and recognized organizations such as Academy of Breastfeeding Medicine and La Leche League.

## Use of this Protocol

This Protocol is intended to support evidence-informed clinical practice. This Protocol may be copied or printed for the purpose of educating health care professionals, provided the authors are acknowledged and content is not altered, nor used or reproduced for commercial gains.

## Disclaimer

This Protocol is a guideline. Every breastfeeding dyad and their circumstances must be assessed on an individual basis. In doing so, health care providers use their own professional judgement along with the evidence in assessing the care and support that the family needs. At times, consultation with another breastfeeding expert or advice from a medical practitioner, e.g., physician, midwife, or nurse practitioner, will be required.

Breast milk/breastfeed/breastfeeding are also known as human milk/chestfeed/chestfeeding respectively and can be used interchangeably. Please note the term ‘mother’ may be used in some resources however, the content is intended for all parents and caregivers.

## Acknowledgements

**TPH Breastfeeding Protocol Workgroup**: Susan Gallagher, BScN, RN, Linda Schwarz, BScN, RN, Jill Mather, BScN, RN & Tracy Petrou, BScN, RN, IBCLC, Toronto Public Health

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"Engorgement is often caused by increased blood flow, the start of copious milk production (lactogenesis II), and tissue swelling. These changes may make it difficult for an infant to latch and transfer milk." (Spencer et.al. 2022). It typically occurs around 3 – 6 days postpartum but may be delayed a few days longer following a cesarean birth. Many breastfeeding parents will experience some degree of bilateral breast engorgement with symptoms such as breast pain or tenderness, as well as firmness and swelling. Effective management of engorgement can prevent progression to more serious inflammatory conditions such as mastitis. (ABM Protocol #36, 2022).

## Observation and Assessment

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

| Breast Fullness | Breast Engorgement |
|---|---|
| • Bilateral symptoms of breast fullness, heaviness, and some tenderness that begins when the breast milk volume starts to increase approximately 2 – 4 days after birth.<br>• Breasts and areola feel soft when pressed (compressible).<br>• Absence of breast pain or fever.<br>• Baby can latch well.<br>• With effective breastfeeding early and often, breast fullness is less likely to become painful engorgement (Mohrbacher, 2020). | • Bilateral symptoms. Breasts and/or areolae that feel sore and hard beginning 3 – 6 days after birth (may be delayed a few days longer post cesarean birth).<br>• Breasts are swollen and not easily compressible.<br>• Generalized breast tightness and pain.<br>• Edema/swelling that may extend into the armpit.<br>• Breasts that appear flushed.<br>• A low-grade fever (due to sudden inflammatory response).<br>• Hands and arms may be numb and tingling if engorgement is severe.<br>• Baby has difficulty latching due to breast/ areolar swelling. |

## Breast Fullness

Breast fullness is a normal physiological response during the early phase of lactogenesis II, with breast milk supply typically increasing between the second and fourth day after birth. It is due to increased vascular supply and postpartum hormonal shifts following the removal of the placenta (see *Breastfeeding Protocol – How the Breast Works* regarding Lactogenesis II).

Breasts may feel heavier, warmer, and slightly uncomfortable. For most this is a reassuring sign that their "milk has come in". This breast fullness does not interfere with breastfeeding and gradually subsides as the body adjusts to the infants' feeding demands. As breast fullness subsides, the breasts will continue to produce plenty of breast milk despite feeling much softer.

Milk storage capacity varies among individuals, and some breasts will reach an overfull, distended state more quickly than others (Wambach & Spencer, 2024). When breastmilk is removed effectively either by the infant or by breast milk expression (pump), breast fullness is less likely to lead to engorgement (Mohrbacher, 2020).

If breasts are not regularly or adequately emptied, fullness can lead to engorgement at any stage of lactation.

## Breast Engorgement

Breast engorgement is often a result of increased blood flow, tissue edema, and the onset of copious breast milk production (lactogenesis II) that may initially exceed the infant's requirements (Spencer, Campbell, Chamberlain, 2022).

Engorgement can also result from the mismanagement of breastfeeding. Breasts can become overfull due to failure to remove breast milk frequently and effectively and may be a reason for early weaning (Wambach, Spencer, 2024). Excess intravenous (IV) fluids administered during labour may also contribute to breast edema, potentially intensifying and prolonging engorgement.

Engorgement may present as:

- Areolar engorgement: involving only the areola and/or
- Peripheral engorgement: involving the surrounding breast tissue, possibly including the including the ducts located in the axilla, or both. (Mohrbacher, 2020).

Multiparous breastfeeding parents are more likely to report more intense engorgement than primiparous breastfeeding parents (Wambach, Spencer 2024).

Breast engorgement may result from any situation that leads to milk stasis. If left unmanaged, severe breast engorgement can lead to further inflammation, edema, and decreased milk production.

Engorgement can make it difficult for the baby to latch on the breast, especially if the areola becomes firm and non-compressible.

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.

## Possible Contributing Factors or Causes

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

### Assess the breastfeeding parent for:

- Ineffective positioning and latching techniques (*Protocol #2: Positioning and Latching*).
- Delayed initiation of breastfeeding.
- Use of bottles, supplements and/or nipple shields.
- Incorrect or ineffective use of breast pump.
- Restricting the frequency and length of breastfeedings.
- Temporarily stopping breastfeeding without expressing for the missed breastfeedings – including separation of the breastfeeding parent and baby.
- Underlying abnormal breast pathology, e.g., non-patent breast milk ducts.
- Breast implants, or surgery.
- Weaning abruptly.
- Stress.
- Fatigue.

### Assess the baby for:

- Ineffective suck (*Protocol #10: Ineffective Suck*).
- Ineffective milk transfer (*Protocol #3: Signs of Effective Breastfeeding*).
- Medical conditions, e.g. jaundice.
- Use of pacifiers (*Protocol #1: The Initiation of Breastfeeding*).

## Suggestions

### 1. Determine the possible cause(s) of the engorgement (previously outlined) and assess for:

- Ineffective positioning and latching. Refer to *Protocol #2: Positioning and Latching*.
- An ineffective suck, refer to *Protocol #10: Ineffective Suck*.
- Infrequent or delayed breastfeeding.
- Inappropriate use of a breast pump.

### 2. Provide the breastfeeding parent with suggestions for breastfeeding with engorged breasts.

- Understand that if engorgement is treated effectively and promptly, most symptoms can resolve within 12 – 24 hours. Delay can result in a progression of further inflammation and edema.
- Follow the infant's early feeding cues, e.g., rapid eye movements under the eyelids, sucking/licking, hands to mouth, increased body movements, and making small sounds.
- Breastfeed effectively, at least 8 times in 24 hours including once overnight, or whenever infant is showing signs of hunger.
- Feed the baby on demand, keeping in mind that the goal is not to "empty" the breasts or "pump to empty". The regulation of a breast milk volume is supported by effective breastfeeding and the feedback inhibitor of lactation (FIL). FIL accumulates in the breast and assists in moderating milk production based on the fullness of the breast. Overfeeding or excessive pumping from the breast may lead to hyperlactation which can worsen tissue edema and inflammation (ABM, 2022).
- Avoid missed or shortened breastfeeding.
- Hold 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 breastfeeding parent'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*).
- Reverse pressure softening may make it easier for infant to latch by moving some of the swelling away from the nipple and areola (see Reverse Pressure Softening Technique).
- Ensure effective positioning and latch.

## The breastfeeding parent 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 back and shoulders, relaxation breathing, a warm drink, supportive breastfeeding positions.
- Manage pain and swelling. (See *Pain Management* below).
- Initiate breastfeeding before the baby is stressed and crying.
- Practice safe skin-to-skin contact.
- See *Protocol #3: Signs of Effective Breastfeeding* for more strategies to help initiate the letdown or breastmilk ejection reflex.
- Hand express some breast milk to get the breast milk flowing (*Protocol #19: Expressing, Collecting, and Storing Breast Milk*).
- Apply heat to back or shoulders for a few minutes until letdown occurs.
- If the areola is hard and swollen, a breastfeeding parent may wish to apply heat briefly before breastfeeding or milk expression by taking a shower or applying warm, moist heat. This may help with milk flow. Avoid applying heat for long periods of time as it can make swelling and engorgement worse (Mohrbacher, 2020).
- Some may 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 breastfeeding parent to:

- Assess that the baby is effectively positioned and latched (*Protocol #2: Positioning and Latching*).
- Consider side lying or laid-back breastfeeding positions to assist with a comfortable latch (Spencer et. al, 2022).
- Assess that the baby is effectively sucking and swallowing (*Protocol #3: Signs of Effective Breastfeeding*).
- Use breast compressions if the baby is not effectively sucking and swallowing or if the breast is not softening. Breast compressions can assist with increasing breast milk transfer and encourage more effective sucking.
- If the baby is actively and effectively transferring milk, there is no need to start or continue with compressions.

## To use breast compression, encourage the breastfeeding parent to:

- Hold the breast with their fingers on one side, thumb on the other, away from the areola (see *illustration* below).

## Breast Compression using the "C" Hold

- Compress (firm but gentle squeeze) the breast when the infant's sucking slows down.
- Hold compression but do not press so hard that it hurts the breast.
- Release the compression when the baby pauses or stops sucking. Most infants will stop sucking completely when the compression is released and will resume sucking again shortly thereafter. If the infant does not resume effective sucking, compress a different area of the breast.
- Continue with breast compressions until the infant is no longer sucking effectively.
- Offer the other breast using breast compressions as needed.
- See Breastfeeding *Protocol #3: Signs of Effective Breastfeeding* for more information.

## After breastfeeding, encourage the breastfeeding parent to:

- Apply cold compresses to breasts after breastfeeding to provide comfort and reduce swelling.
- Try one of the following methods:
  - A cool wet towel or cloth.
  - A cold gel pack wrapped in a dry towel.
- Wrap any cold packs in a cloth to protect the skin. Cold compresses can be applied every hour or more frequently if desired (limit cold exposure to 10-20 minutes at a time).
- If breasts remain hard and full after an effective breastfeed, the breastfeeding parent can express a small amount of breast milk to relieve pressure and increase comfort (see *Protocol #19: Expressing and Storing Breast Milk*).
- Express only enough to ease discomfort, do not drain the breasts completely, as this may stimulate increased milk production and worsen engorgement. As engorgement subsides, expression can stop to avoid stimulating further breast milk production or oversupply.

## Pain management

- If the breastfeeding parent is in pain, encourage them to discuss with their healthcare provider about pain medication compatible with breastfeeding (LI category), such as ibuprofen, nonsteroidal anti-inflammatory analgesic (NSAID) that may also help reduce tissue swelling more quickly or acetaminophen, an analgesic/antipyretic used in the treatment of fever and pain. (Mohrbacher 2020 & Hale 2023)
- According to Mitchell et. al (2022), ice/cold compresses and non-steroidal anti-inflammatory drugs (NSAIDs) can reduce edema and inflammation and provide symptomatic relief. Acetaminophen/paracetamol can provide analgesia.
    - Ice/cold compresses can be applied every hour or more frequently if needed.
    - Ibuprofen can be dosed at 800 mg every 8 hours.
    - Acetaminophen/Paracetamol can be dosed at 1000 mg every 8 hours.

## Strategies to Prevent Engorgement

- Watch the baby for early feeding cues to support timely and frequent breastfeeding:
    - 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 parent's breasts become uncomfortable or full.
    - At least 8 times in 24 hours, including overnight, until breasts are no longer engorged.
- Wear a supportive and well-fitting bra. Avoid bras with underwires.
- 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.
- Avoid the use of nipple shields if possible. Nipple shield use can result in inadequate removal of breast milk due to the potential for ineffective latching (Mitchell et.al., 2022). Refer *to Protocol #8: Flat or Inverted Nipples*.

## If the baby is unable to breastfeed effectively, encourage the breastfeeding parent to:

- Gently hand express or pump each breast, each time the baby has been unable to breastfeed effectively. (*Protocol #19: Expressing and Storing Breast Milk*).
- If breastfeeding is stopped for any length of time the breastfeeding parent will need to express each breast 8 times or more in 24 hours, including overnight, as long as breasts are engorged.
- Only express the amount of breast milk that the infant requires. This helps regulate breast milk production. Expressing too much can lead to increased engorgement, swelling and discomfort, and may stimulate excessive breast milk production.
- If areola is hard, soften the areola using reverse pressure softening technique and initiate the letdown reflex. See *Protocol #3: Signs of Effective Breastfeeding* for more strategies to help initiate the letdown or breastmilk ejection reflex.
- Feed the baby with the expressed breast milk using an alternative feeding method if they are unable to latch, 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*).
- Consult a breastfeeding expert or attend a breastfeeding clinic for further assessment and support as soon as possible.

## General Principles

- **Prevention** is key to managing engorgement.
- Fundamental to preventing engorgement is:
  - Minimize intravenous fluids during labour, as excess interstitial fluid can increase edema and engorgement.
  - Early initiation of breastfeeding.
  - Frequent and unrestricted breastfeeding.
  - Effective positioning and latching practices.
  - Effective removal of breast milk.
  - Not supplementing unless medically indicated.
  - Education on hand expression and reverse pressure softening to relieve symptoms.
  - Support infant feeding when direct breastfeeding is not possible and facilitate latching and milk transfer.

    (Adapted from Mohrbacher 2020 & Mitchell et.al, 2022)
- Engorgement can occur with the onset of lactogenesis II, typically around 3 to 5 days postpartum. In cases of cesarean delivery, this onset may be delayed by 1 – 2 days (Spencer et. al., 2022). It may also occur at a later time due to missed breastfeedings or weaning too abruptly.
- While engorgement often begins to subside shortly after onset, some individuals may experience symptoms for up to two weeks (Wambach & Spencer, 2024).
- For multiparas, engorgement may occur earlier, and with more intensity (Wambach & Spencer, 2024).
- As a result of short hospital stays, most breastfeeding parents 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.

## Strategies for Reducing Engorgement

- According to Spencer et.al. (2022), the most effective management of breast engorgement includes optimal breastfeeding and milk removal, the use of cold compresses to reduce inflammation and swelling, and pain relief with the use of ibuprofen, and acetaminophen.
- In addition to these core strategies, some health care providers may recommend additional treatments such as reverse pressure softening, lymphatic drainage, or the application of cabbage leaves.
- **Research Challenges** – It is difficult to conduct conclusive scientific research related to the management of engorgement because engorgement will often spontaneously resolve no matter what treatment is used.
    - An updated Cochrane review (2020) by Zakarija-Grkovic and Stewart reviewed 21 studies involving 2170 breastfeeding individuals to determine the effectiveness of different treatments for engorgement. They concluded that: "although some interventions may be promising for the treatment of breast engorgement, such as cabbage leaves, cold gel packs, herbal compresses, and massage, the certainty of evidence is low, and we cannot draw robust conclusions about their true effects. Future trials should aim to include larger sample sizes, using women – not individual breasts – as units of analysis" (p.3).

  Effective management of pain and discomfort is an important consideration, and interventions that help improve comfort, even if they do not fully resolve engorgement, may still offer significant benefits and may help to reduce early weaning (Wambach & Spencer, 2024).
- **Expression/Pumping** – If a breastfeeding parent is expressing breast milk – either by hand or pump – they should express only the amount of breast milk the infant requires. This helps to regulate breast milk production.
- Expressing too much can increase swelling and discomfort, and may further stimulate breast milk production, potentially worsening engorgement symptoms. (*Protocol #19: Expressing and Storing Breast Milk*).
- **Heat vs. Cold**– Use of cold compresses (not heat) applied to engorged breasts between feedings can help decrease local edema and enhance venous and lymphatic drainage, as well as provide comfort. Breastfeeding parents should protect their skin from direct exposure to extreme cold by wrapping cold packs in a cloth. Heat may be applied to the back or shoulders to promote relaxation, comfort, and letdown.
- **Cabbage Leaves** – Cabbage leaves have historically been suggested as a remedy for breast engorgement. However, current research indicates they may be no more effective than ice/cold compresses. **Evidence supporting the use of cabbage leaves is limited, and caution is advised**.
    - Some breastfeeding parents report that green cabbage leaves help relieve discomfort and reduce engorgement, but this effect has not been scientifically proven.
    - Studies suggest that any benefit may be due to the cooling effect (vasoconstriction), rather than a specific property of cabbage itself. Additionally, cabbage may carry Listeria bacteria (Mitchell et.al., 2022).
    - Listeriosis can be a serious illness, particularly for newborns, those who are pregnant, or immunocompromised. While applying cabbage leaves to the skin poses less risk than ingestion, it is reasonable to advise against placing cabbage leaves on nipples or breasts with open lesions. They should also not be used by parents with immunocompromised infants, including premature babies.

Should a parent choose to use cabbage leaves, it is essential to:

- Wash hands thoroughly before and after handling.
- Use raw, green cabbage leaves and wash them with soap and warm water before their use.
- After cleaning, remove large veins and cut a hole for the nipple.
- Ensure utensils, cutting boards, and counter-tops have also been cleaned with hot soapy water.
- The leaves can be placed in the refrigerator until use.
- Place the leaves on the breasts (avoiding the nipple) and wear them inside a bra.
- Replace leaves when they wilt, typically after 2 – 4 hours.
- Stop using once engorgement is relieved, as overuse may reduce milk supply.

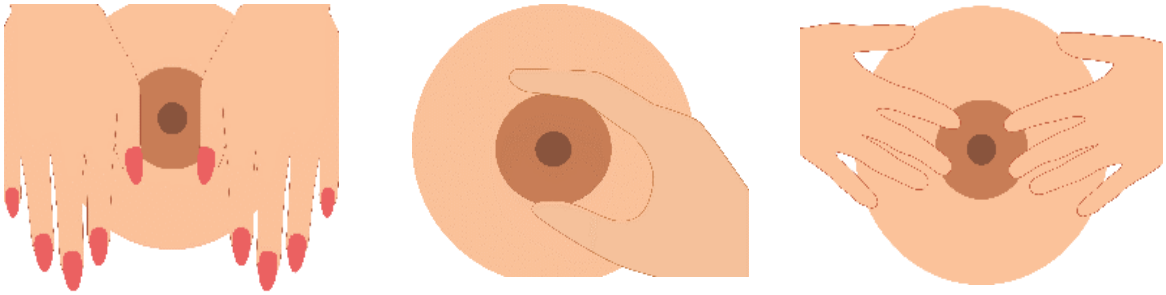
Source: Adapted from Mohrbacher, 2020.

For more information on prevention of listeriosis visit Government of Canada website: Listeriosis (Listeria) - Canada.ca

**Cultural Practice Considerations** – It is important to acknowledge that some cultures traditionally avoid cold exposure during the postpartum period. Having a conversation with the breastfeeding parent about traditional and cultural practices and exploring their significance, can assist in facilitating an informed decision. It creates an opportunity to offer accurate information about how the possible benefits and risks of tradition practices may impact their breastfeeding success. Some breastfeeding parents 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.

## Reverse Pressure Softening (RPS)

- Reverse pressure softening may help an infant latch more easily by shifting some of the swelling away from the nipple and areola.
- Removing the swelling can improve nipple elasticity, making it easier for the baby or pump to initiate milk flow. However, suckling or pumping may rapidly pull lymph fluid back into the area. To address this, the breastfeeding parent might need to alternate 1 minute of RPS with a few minutes of breastfeeding or pumping until the breast tissue become significantly softer. (Wilson-Clay & Hoover, 2022)
- To perform the technique, place either fingers or fingertips around the base of the edematous nipple or areola to create a ring of dimples.
- Press gently into the breast holding the pressure for about 30 – 60 seconds. Move placement of hands on the areola and hold for another 30 to 60 seconds as needed.
- The gentle pressure applied around the nipple/areola will push the fluid back/upward into the breast and soften the areola to allow for a more effective latch.



## Lymphatic Drainage

- Lymphatic drainage is a technique that can be used to reduce swelling by assisting with the movement of lymphatic fluid and decreasing edema in an engorged breast.
- To perform the technique, breastfeeding parents should use very gentle touch/traction of the skin (a light sweeping motion, like petting a cat) being careful not to press deeply into the tissue. The gentle traction will help lift the skin to allow flow of excess fluid.

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## Technique:

- Make 10 small circles at the base of the neck, just above the clavicle.
- Make 10 small circles in the axilla.
- Continue with light touch sweeping motion as described above, from nipple towards the sternum, clavicle, and axilla.
- With proper management, engorgement typically resolves within 24 – 48 hrs. If left untreated, it can lead to increased inflammation and milk stasis, potentially progressing to plugged ducts or mastitis.

If strategies aren't working and engorgement is not improving, another breastfeeding issue may be present, and the breastfeeding parent should be referred to a breastfeeding expert or breastfeeding clinic for further assessment as soon as possible.

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