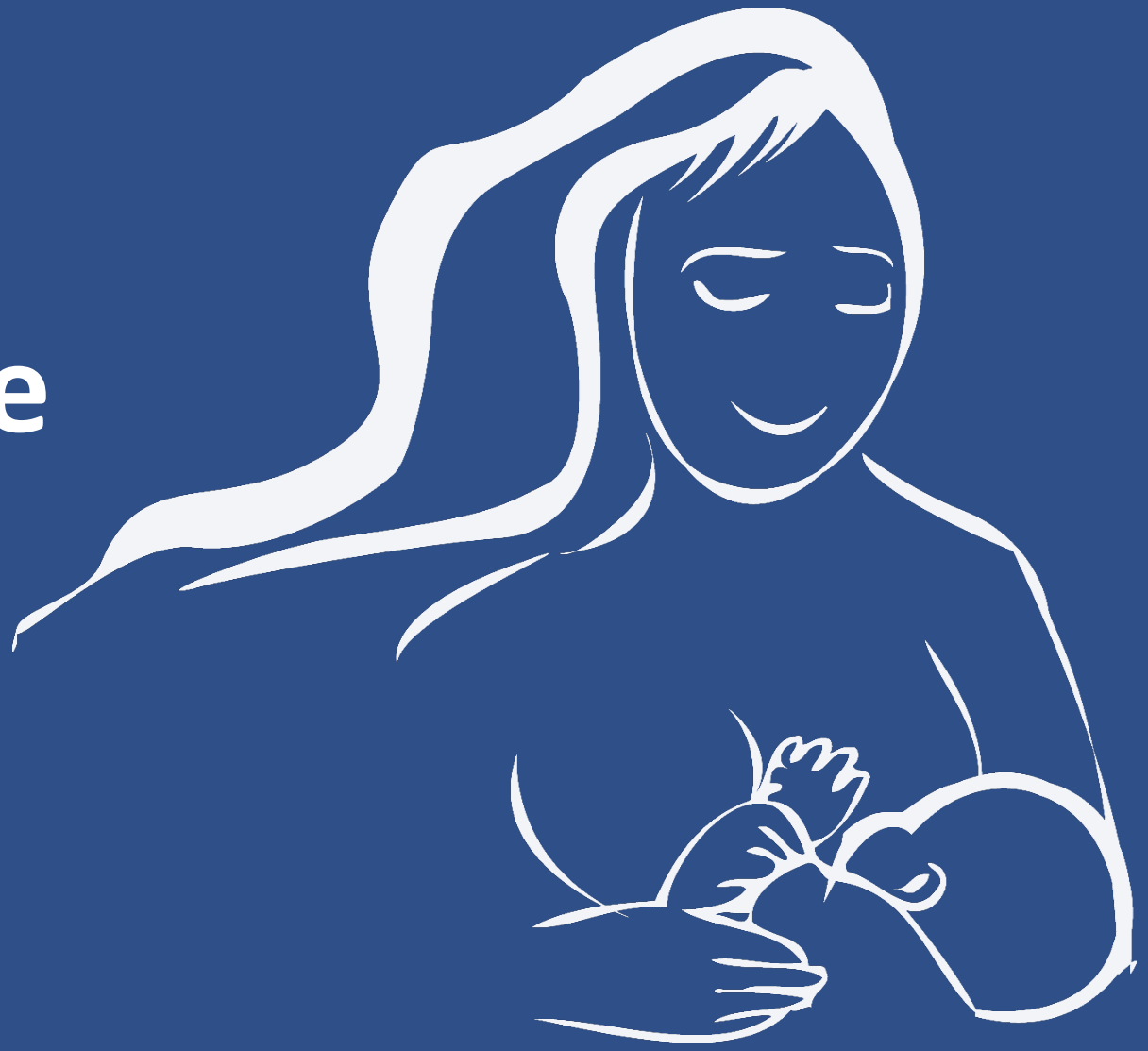
Clinical Pearls for Lactation Medicine

September 28th, 2026



Interior Health

Indigenous Acknowledgment

Land Acknowledgement

We would like to recognize gathered today on the traditional, ancestral, and unceded territory of the Syilx Okanagan people, and specifically within the territory of the Penticton Indian Band. We are grateful for the opportunity to live, learn, and work on this land, and we recognize the Syilx Okanagan people's ongoing relationship with, and stewardship of, this territory since time immemorial.



Acknowledgments & Disclosures

Thank you to our sponsors:

JCC Joint Collaborative Committees

KGH FOUNDATION

Rural Coordination Centre of British Columbia

SG. more OB

Midwives Association of British Columbia

KCR Community Resources

Disclosure Statement

This presentation follows the WHO/UNICEF International Code of Marketing of Breast-milk Substitutes Code. None of the speakers have a conflict-of-interest disclosure that conflicts with the Code.

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Baby-Friendly Initiative

TOGETHER WE ARE BABY-FRIENDLY

The Penticton Regional Hospital was designated as Baby-Friendly in December 2023 and the Penticton Health Centre was designated in January 2024



World Health Organization

unicef

Organizing Committee and Thank-yous

Haley Olsthoorn and Karen Graham of Interior Health (IH) worked alongside each other for the past six months to develop this event. Thank you to IH's Maternal, Newborn, Child and Youth Program who helped shape the topics for this presentation topics along with Karen, Haley and the speakers.



Haley Olsthoorn, RN, IBCLC, IH Penticton Baby-Friendly Initiative Coordinator at the Penticton Regional Hospital and Penticton Health Centre.
Managers: Cindy Barton and Patricia Park



Karen Graham, RD, CDE, IH Public Health Dietitian, Population Health, Coordinator of the Breastfeeding Systems Change Project and lead on the *Physician Breastfeeding Guide*.
Manager: Katrina Lehenbauer

Thank you to the distinguished and knowledgeable speakers including Penticton's Tiffany Holdsworth-Taylor, and the three breastfeeding medicine physicians: Dr. Shawna Lamond from Calgary, Dr. Michelle Arnold from Vernon and Dr. Virginia Clark from Golden.

To the 45 people who joined the live dinner event, and the 100 who joined the live webinar and all viewers of this PowerPoint – thank you for your interest and commitment to breastfeeding.

Speaker Bios



Tiffany Holdsworth-Taylor

Registered Midwife, IBCLC and owner of The Milk Clinic, who provides in-person, remote and in hospital care. She worked at Jack Newman's International Breastfeeding Centre in Toronto and is currently an adjunct Professor with UBC's Department of Family Practice. Tiffany is passionate about advancing breastfeeding education and contributed to resources including the IH breastfeeding videos, BFI nursing competencies and PSBC Health Hub.



Dr. Shawna Lamond

Family physician with 18 years in family medicine and lactation medicine. Lead physician for The Alex Breastfeeding Clinic, Riley Park Lactation Clinic and co-owner of Well Fed Clinics in Calgary. Shawna advances breastfeeding education and training of physicians and medical residents and the continuum of care from pregnancy to postpartum. She is a clinical lecturer for the Department of Family Medicine in the Cummings School of Medicine.



Dr. Michelle Arnold

Family physician who has been providing lactation support at both the Well Fed Clinic and Avivo Health Alliance in Calgary, as well as practicing maternity care at Foothills Hospital. She has recently moved with her family back to her hometown of Vernon, BC. Michelle is excited to continue caring for families through low-risk maternity care at the Orchard Maternity Clinic in Vernon, with a special interest in supporting lactation and infant feeding.



Dr. Virginia Clark

Family physician and IBCLC offering full service practice in Golden BC for over 20 years with a recent restriction to intrapartum obstetrics and lactation medicine. Ginny has provided high-volume, low-risk intrapartum care in Calgary for over 25 years. She is a member of the MoreOB team in both locations and also an ALARM (Advanced Labour and Risk Management) and NRP (Neonatal Resuscitation Program) instructor.

Event Topics

Haley Olsthoorn (10 Minutes)
Introductions and Welcome
- Baby-Friendly Initiative
- Why Lactation Matters
- Penticton Milk Depot

Tiffany Holdsworth-Taylor (10 Minutes)
Identifying At-Risk Families
- *Antenatal Risk Factors*
- *Postpartum Risk Factors — Newborn and Maternal*
- *Where to Refer*

Shawna Lamond and Michelle Arnold (15 minutes)
Antenatal Lactation
Case Study - Low Milk Supply
- Antenatal Risk Factors for Low Milk Supply
- Breast physiology
- Management — Discussion about Metformin

Virgina Clark (10 Minutes)
Latch and Nipple Care Tips
- Comfortable Latch and Breastfeeding Positions
- Do's and Don'ts of Nipple Pain Management

Michelle Arnold (15 minutes)
Mastitis Spectrum Update
- *Inflammatory vs Infectious*
- *Antibiotics vs Conservative Management*
- *Mastitis vs Engorgement*

Shawna Lamond (20 Minutes)
Troubleshooting Variants in Infant Oral Anatomy and Determining Solutions
- Infant Anatomy Considerations
- Prevention and Tips for Management
- When Do Ties Need to be Clipped?

Tiffany Holdsworth-Taylor (10 Minutes)
Pumping Pearls
- Risks of Pumping
- Pumping and Dumping
- Pumps and Flanges

Virgina Clark (15 Minutes)
Physician Breastfeeding Guide
- How to Use the Guide
- Breastfeeding Troubleshooting

Q&A (15 Minutes)



Identifying At-Risk Families

Tiffany Holdsworth-Taylor

Lactation Risk Factors

1. **Why is early identification important?**
2. **Who is at risk?**
3. **Where to refer?**

Please remember these are risk factors, not certainties. Many parents have one or more of these risks and still go on to have a wonderful, successful breastfeeding experience.

IDENTIFYING AT-RISK FAMILIES

Early Identification

Early support starts in pregnancy!

Step 3 of the Baby-Friendly Initiative: Discuss the importance and management of breastfeeding with pregnant individuals and their families.

All families should be referred to breastfeeding education, but some will need more.

Early identification of risk factors is important to be able to establish proactive, tailored care plans prior to delivery.

Planning can:

- Mitigate delayed lactogenesis
- Support early intervention latching support
- Manage parental expectations
- Informed decision making unique to health history rather than generic information
- Build support networks

Academy of Breastfeeding Medicine

Early lactation support is crucial to help prevent premature cessation of breastfeeding. The first few days and weeks set the physiological foundation for milk production and timely support. And care plans can prevent early, unintended weaning.

IDENTIFYING AT-RISK FAMILIES

Antenatal Lactation Risk Factors



Anatomical

- Anatomical variants
- Breast/chest surgery
- Infant risk factors

Medical

- Endocrine disorders
- Medical disorders
- History of infertility /assisted reproductive technology
- Extremes of maternal age
- Risk of preterm birth
- Maternal medication use / polypharmacy

Psychosocial

- History of infant feeding challenges
- History of/current mental health challenges
- Intention to both breastfeed and bottle feed or formula feed, or use pacifiers at <6wks after birth
- Inducing lactation / co-lactation
- Nursing an older sibling during pregnancy

IDENTIFYING AT-RISK FAMILIES

Low Milk Supply Risk Factors

Risk factors for low milk supply are often missed, but early identification is crucial.

Having multiple risk factors increases the risk and degree of low milk supply.

nutrients

MDPI

Article

Defining Low Milk Supply: A Data-Driven Diagnostic Framework and Risk Factor Analysis for Breastfeeding Women

Xuehua Jin [1,2,3], Ching Tat Lai [1,2,3], Sharon L. Perrella [1,2,3], Zoya Gridneva [1,2,3], Jacki L. McEachran [1,2,3], Ghulam Mubashar Hassan [4], Nicolas L. Taylor [1,5] and Donna T. Geddes [1,2,3,5,*]

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5 ARC Training Centre for Next-Gen Technologies in Biomedical Analysis, The University of Western Australia, Crawley, WA 6009, Australia
* Correspondence: donna.geddes@uwa.edu.au

Abstract

Background: Current low milk supply (LMS) definitions use subjective maternal perceptions or arbitrary thresholds for 24 h milk production (MP), potentially misclassifying cases. This study aimed to re-evaluate the definition of LMS using data-driven approaches and investigate associated maternal risk factors. **Methods:** Lactating mothers 4–26 weeks postpartum (n = 460) provided demographic, obstetric, and infant data and measured 24 h MP and infant milk intake using the test-weighing method. Infant growth was calculated as their weight-for-age z-score. Latent profile analysis, receiver operating characteristic

- BMI (≥ 25)
- AMA (≥ 35)
- GDM
- Minimal breast growth during pregnancy
- Fertility issues
- Thyroid disorders
- PCOS
- Hypertensive disorders in pregnancy
- Breast surgery
- PPH

See Section 3, Physician Breastfeeding Guide, pages 36–47

Postpartum Lactation Risk Factors

As per the ABM, referral for specialist care should be made as early as possible for any families with risk factors:

Maternal

- Peripartum complications
- Need for breastfeeding aids or appliances
- Mental health challenges
- Early return to school or work
- Low milk supply, absent secretory activation, hyperlactation req investigation
- Nipple wound care
- Complex nipple / breast pain



Postpartum Lactation Risk Factors

As per the ABM, referral for specialist care should be made as early as possible for any families with risk factors:

Infant

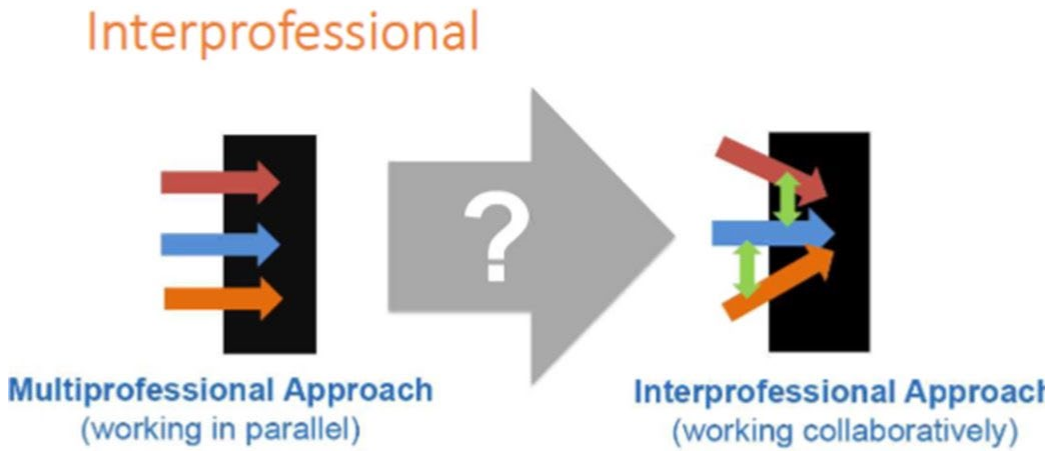
- Low birth weight / IUGR
- Growth faltering and weight loss, failure to regain birth weight
- Persistently sleepy infant
- Breast refusal or difficulty latching
- Prematurity (<37 wks)
- Transferring home from NICU
- Multiples
- Bottle feeding challenges or refusal
- Ineffective sucking or milk transfer concerns
- Oral anatomic abnormalities in infants with medical diagnoses or neurologic problems



Approach to Refer



Stepped approach to lactation support



http://www.cabvibanff.org/uploads/4/6/9/5/4695394/tracy_paulenko-abstract328_-ip_lens_workshop_28-9-17-_final.pdf

Where to Refer in Interior Health



IBCLC

International Board-Certified Lactation Consultant

- Healthy from the Start (HFS) breastfeeding support phone line: 1-855-868-7710
- IBCLC Public Health Nurses
- Private Lactation Consultants (fee for service): bclca.com

Lactation Medicine

MD, RM, NP; NABBLM-C. Referrals required, MSP covered (some limitations for RMs).

- The Milk Clinic — Penticton, West Kelowna, Virtual
- Bloom Collaborative Clinic — Kelowna
- Hopefully more to come!

LA LECHE LEAGUE CANADA

Peer-to-Peer Support

- La Leche League
- Local Baby Cafés or other groups



Antenatal Lactation

Case Presentation — Low Milk Supply

Dr. Shawna Lamond & Dr. Michelle Arnold

ANTENATAL LACTATION

Routine Antenatal Care — Lactation Screening

Lactation plans and goals

- Direct breastfeeding
- Pumping/bottling
- Suppressing lactation

Lactation History

- Hyperlactation or low supply

Breast surgeries

Breast changes in pregnancy

Any questions about lactation

Lactation Risk Factors

Medical

- Diabetes, insulin resistance-PCOS, obesity
- Infertility
- Thyroid disease
- Breast surgeries
- Nipple numbness
- Chronic medications (i.e. aripiprazole, cabergoline)
- Epilepsy, MS

Antenatal

- Multiple gestation
- Anticipating preterm delivery
- Gestational diabetes
- No antenatal breast changes

Case Presentation



- Sheena is a G2P1 32 y.o mother who is currently 34+2 wks.
- **Current pregnancy:** healthy, gestational diabetes screen was negative.

Case Presentation

Lactation history:

- 5 y.o daughter, Kate, was born at 39wks via uncomplicated vaginal delivery, birth weight 8lb 2oz (AGA)
- Latched on demand in hospital with a comfortable latch
- PPD 2 & 3: a bit sleepy at the breast
- PPD day 3: seen by public health and Kate had lost 6% of BW; Sheena felt some firm lumps in her breast so thought milk was just starting to come in, continued to latch regularly
- PPD 5: Follow up with public health nurse, now 11% from BW, recommended to start supplementing
- Sheena started triple feeding and Kate continued to require supplementation through their lactation journey. Sheena never produced a full supply
- Combo feed with formula top-ups until 4 months when she switched fully to formula

Breast Exam

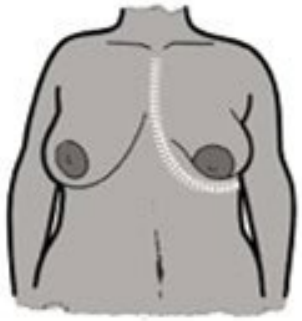
Antenatal

- Presence of scars
- Size of breasts
- Nipple innervation

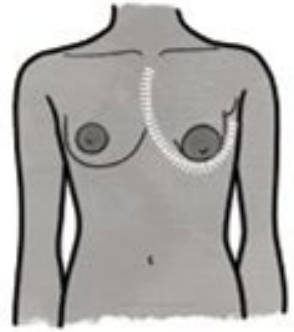
Features of Breast Hypoplasia

- Widely spaced breasts
- Lacking medial breast fullness
- Bulbous areola
- Tubular shaped breasts
- Asymmetry of breasts

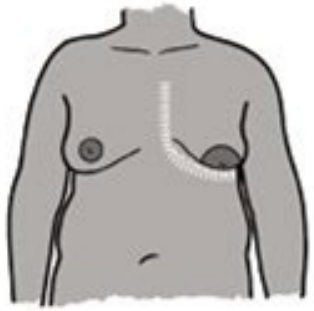
TYPE 1
Upper part of left breast close to armpit is normal, but less fullness at lower part of breast, and breast might look flatter.



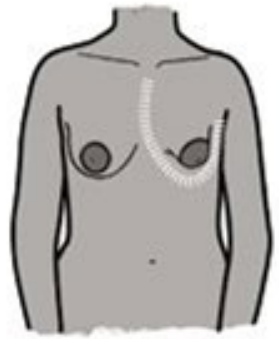
TYPE 2
The left nipple is larger than the right. There is less fullness in the lower and lateral part of the left breast.



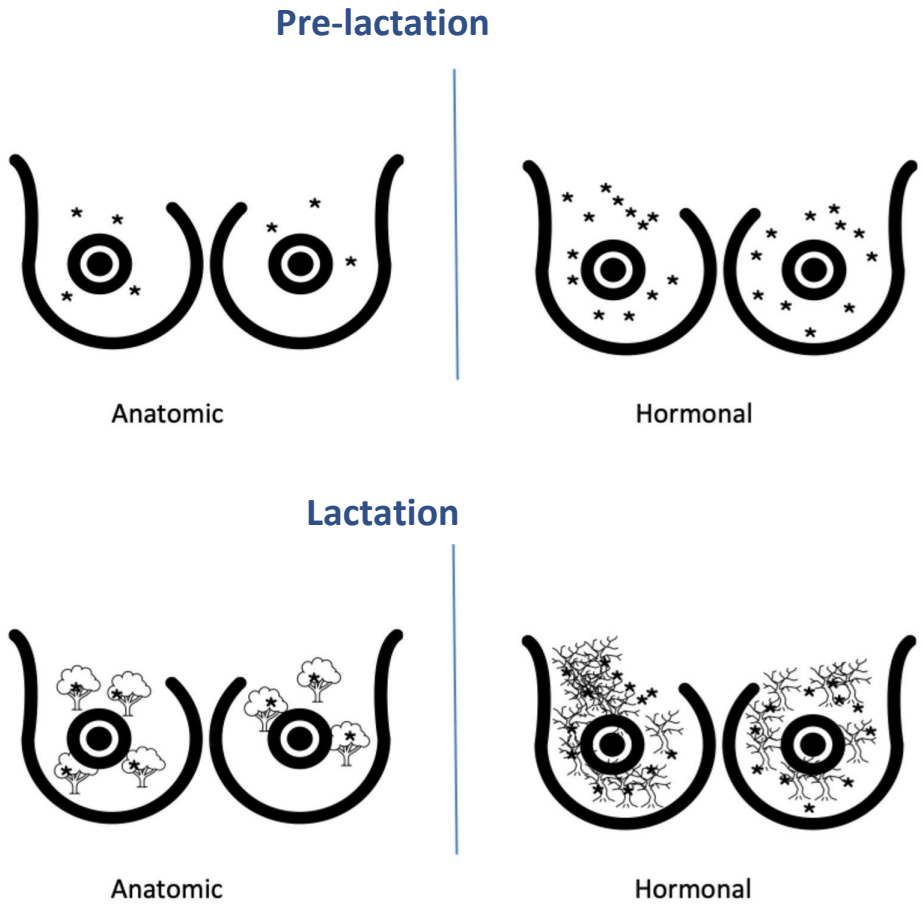
TYPE 3
Widely spaced breasts. Asymmetry of nipples. Less fullness in the left breast in the subareolar region.



TYPE 4
Little breast fullness and less subareolar tissue on left breast.



Breast Development Patterns – Low Glandular Tissue



Hormones of Breast Development

- Breast development stimulated by progesterone and estrogen during puberty and pregnancy
- In puberty, GH and estrogen are essential for breast development
- GH induction of IGF-1 mostly from liver
- During pregnancy, rise in estrogen stimulates ductal growth
- Early pregnancy: progesterone and prolactin stimulate alveolar growth, insulin decreases progesterone
- Mid-pregnancy: Secretory differentiation (Lactogenesis I)
- Birth: fall in progesterone results in secretory activation (Lactogenesis II)

Insulin and Lactogenesis

- Insulin receptors are on lactocytes
- Insulin is needed for mammary gland to take up glucose
  - Glucose is precursor to lactose
  - Lactose drives volume via osmolality, rate limiting set in production
  - Glucose is needed to manufacture milk proteins and fat
- Insulin regulates protein synthesis in the mammary gland.
- Mild insulin resistance is associated with delay in lactogenesis 2
- Mothers with gestational diabetes are at higher risk of low production



Predicting Low Glandular Tissue

Metabolic factors

- GDM
- PCOS
- Obesity

Breasts

- Hypoplastic contours
- No or minimal breast growth in pregnancy
- History of breast augmentation (possible pre-surgical hypoplasia)
- Hx of low milk supply with no response to domperidone — consider glandular tissue cause for low supply
- Connective tissue (ED, hypermobile)

ANTENATAL LACTATION

Low Glandular Tissue Management – Metformin

- Off label use
- Start 34–36wks and continue PP (or start PP), beneficial for up to 4mo PP
- Caution antenatal use if any fetal growth restriction, gestational hypertension or preeclampsia
- Initial dose: 250mg BID, up-titrate q5 days if tolerating
- Ideal dose: 500mg TID or 1000mg BID (ER form okay)
- Side effects: Nausea, diarrhea
- Consider Vit B12 supplementation if long term use

Metformin – Continued

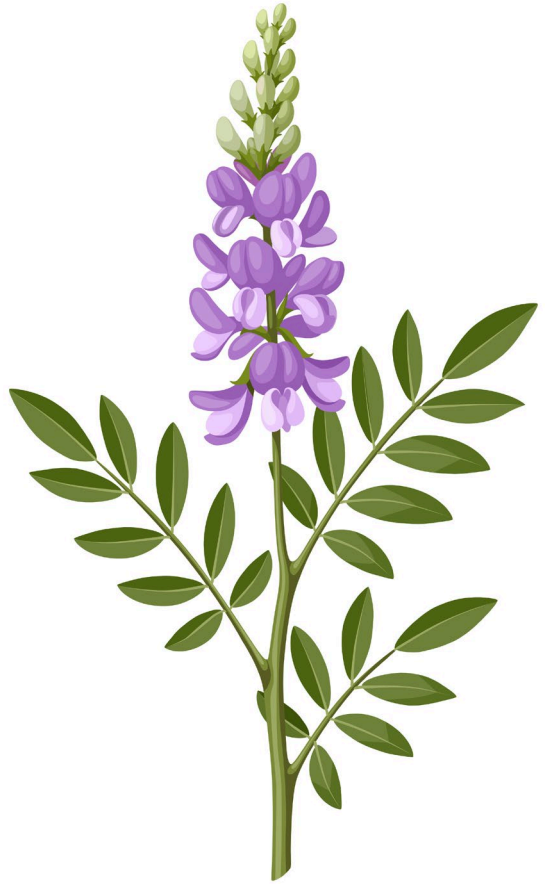
- Metformin is excreted into breast milk in non-significant amounts
- Plasma levels in infants were very low or undetectable

No problems have been observed in infants whose mothers have taken metformin.

Alternative Herbal Galactogogue: Goat's Rue

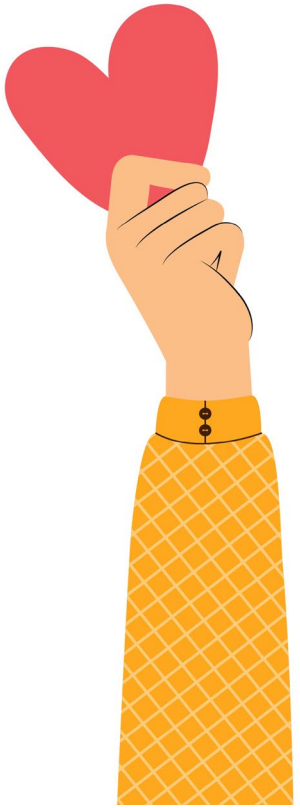
(Galega Officinalis)

- Improves insulin sensitivity
- Slow increase in milk volumes
- A few poorly designed trials showing effectiveness, although in most studies goat's rue is used in combination with other herbs
- Risks: Hypoglycemia for diabetic mother, anticoagulant effect for mothers
- Maternal side effects: Headaches, weakness, jitteriness, low blood pressure, cough
- Available in liquid tincture or capsules



Adapted with permission from IABLE

Case Conclusion — Success Story!



Prenatally

- ✓ Sheena was started on metformin @ 36wks

Postpartum

- ✓ She had skin-to-skin time and baby latched often over the first few days
- ✓ Her milk came in at day 3
- ✓ She needed to supplement with human donor milk
- ✓ By 1 month she was producing 90% of her baby’s intake needs and continued on metformin for 4 months postpartum

ANTENATAL LACTATION

Routine Antenatal Topics

- Antenatal colostrum hand expression
- Early postpartum lactation management
- When supplementation is required and how to supplement to support latching and lactation
- Positioning for maternal comfort and optimizing latch
- Local lactation resources and how to access them
- Online resources (videos etc.) — see pages 14 and 34 of the Physician Breastfeeding Guide



Latch and Nipple Care Tips

Dr. Virgina Clark

LATCH AND NIPPLE CARE



My nipples have been sore since I was discharged from hospital. I'm not sure I can keep on breastfeeding.

A Comfortable Latch = Good Milk Transfer



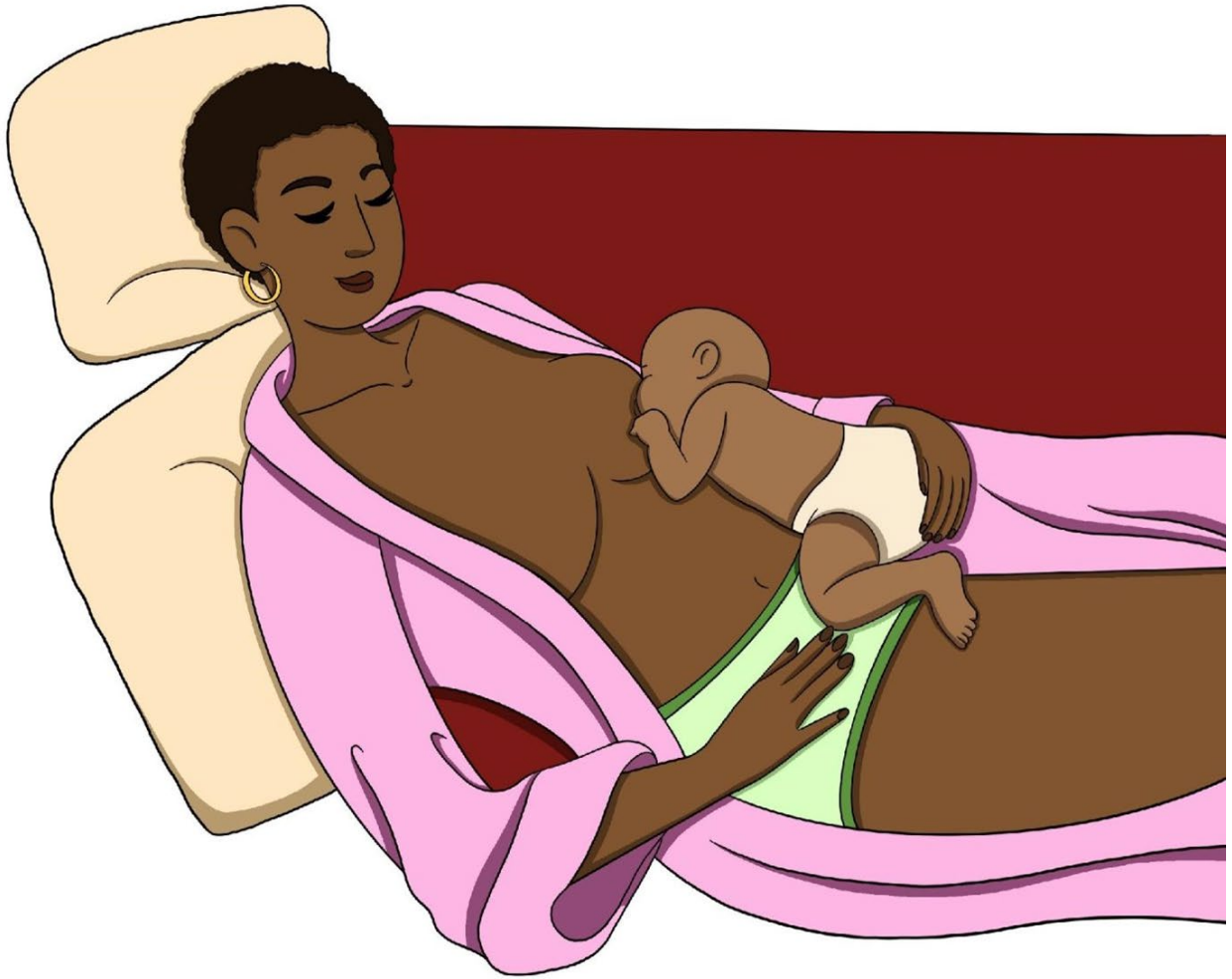
Painful latch on nipple only is a shallow Latch. **Less milk transfer.**

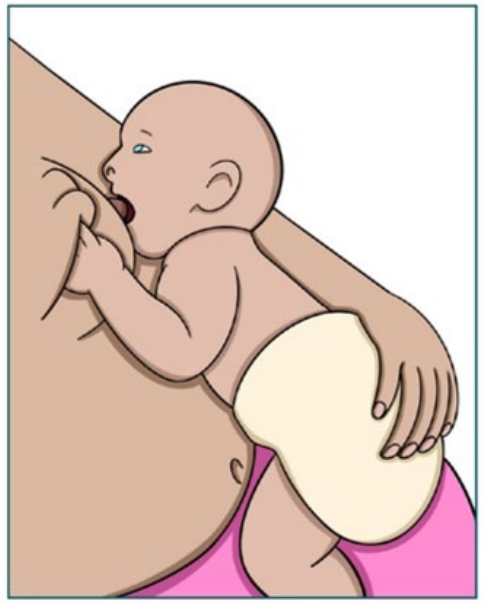


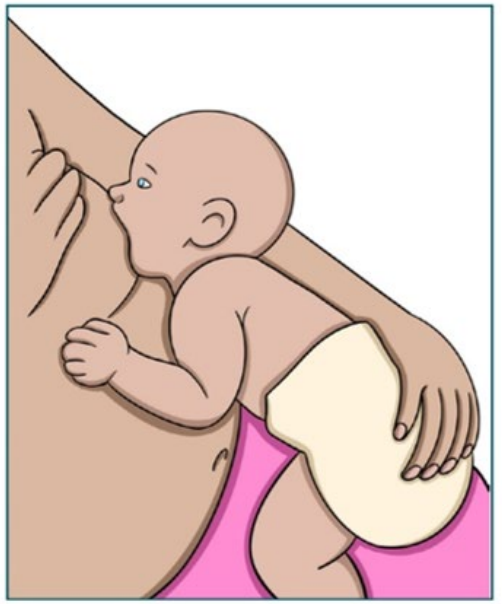
Comfortable latch on nipple and areola is a good latch. **Good milk transfer.**

See Practice Tip 2 on Latch and Position in the Physician Breastfeeding Guide — pages 19–21, and videos for parents on page 34.

Laid-Back Position







LATCH AND POSITIONS

Side-Lying Position

- Like the laid-back, allows mom to relax and rest while feeding her baby
- Good option for women who have had a c-section and/or have large breasts



Cross-Cradle Position

LATCH STEPS

1. Push base of hand firmly against baby's shoulders, allowing baby's head to tip slightly back with chin coming in first.

2. When baby's mouth is wide open like a yawn, pop baby on.



3. Latch should be on nipple and areola.

4. Direct the nipple to the roof of baby's mouth.



Keep baby's body held tightly against the mother's body to prompt feeding reflexes and achieve a good latch.

Football Hold Position

- Have mother hold her baby along her side, tightly tucked in, with her elbow bent.
- This allows her to use her other hand to shape the breast and to do breast compressions if needed.



LATCH AND POSITIONS

Nipple Pain Management: Do’s and Don’ts

Mild discomfort in early breastfeeding is normal. This typically resolves with a comfortable latch where the baby draws the nipple and areola further into the back of their mouth to reach the soft palate.

Therefore, ongoing pain is not normal.

DO’S

- Assess and correct latch
- Referral if needed
- Keep sore nipples lubricated: commercial nipple balm ointment
- For severe/deep wounds: keep covered and use hydrogel pads, or a combination of nipple balm with hydrogel pads
- Seeping wounds: use polyurethane matrix pad (Mepilex®), without balm
- Pain meds prn

Referral if needed.



Nipple Pain Management: Do's and Don'ts

DON'TS

- **APNO** = All-Purpose Nipple Ointment is not recommended
- **Nipple shields usually not recommended**
  - Shields obscure direct contact of the baby's mouth with the mother's nipple and areola, which reduces prolactin signaling for milk production
  - In specialized situations may have uses for temporary relief with short-term benefits
- **Silverettes®** and breast shells can cause pressure on the nipple and increase edema. They can also interfere with healing by bathing the nipple in breastmilk.
- **Some soaps, oils, ointments and disposable breast pads** can be irritating
- **Caution with pumping**



Nipple Shield



Silver Breast Shells

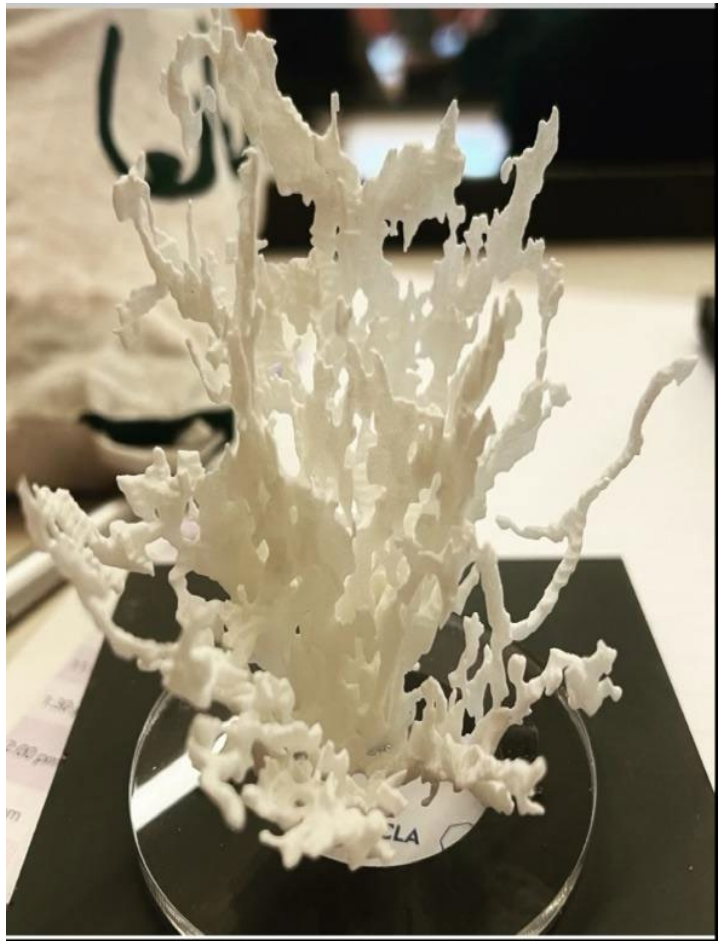


Mastitis Spectrum Update

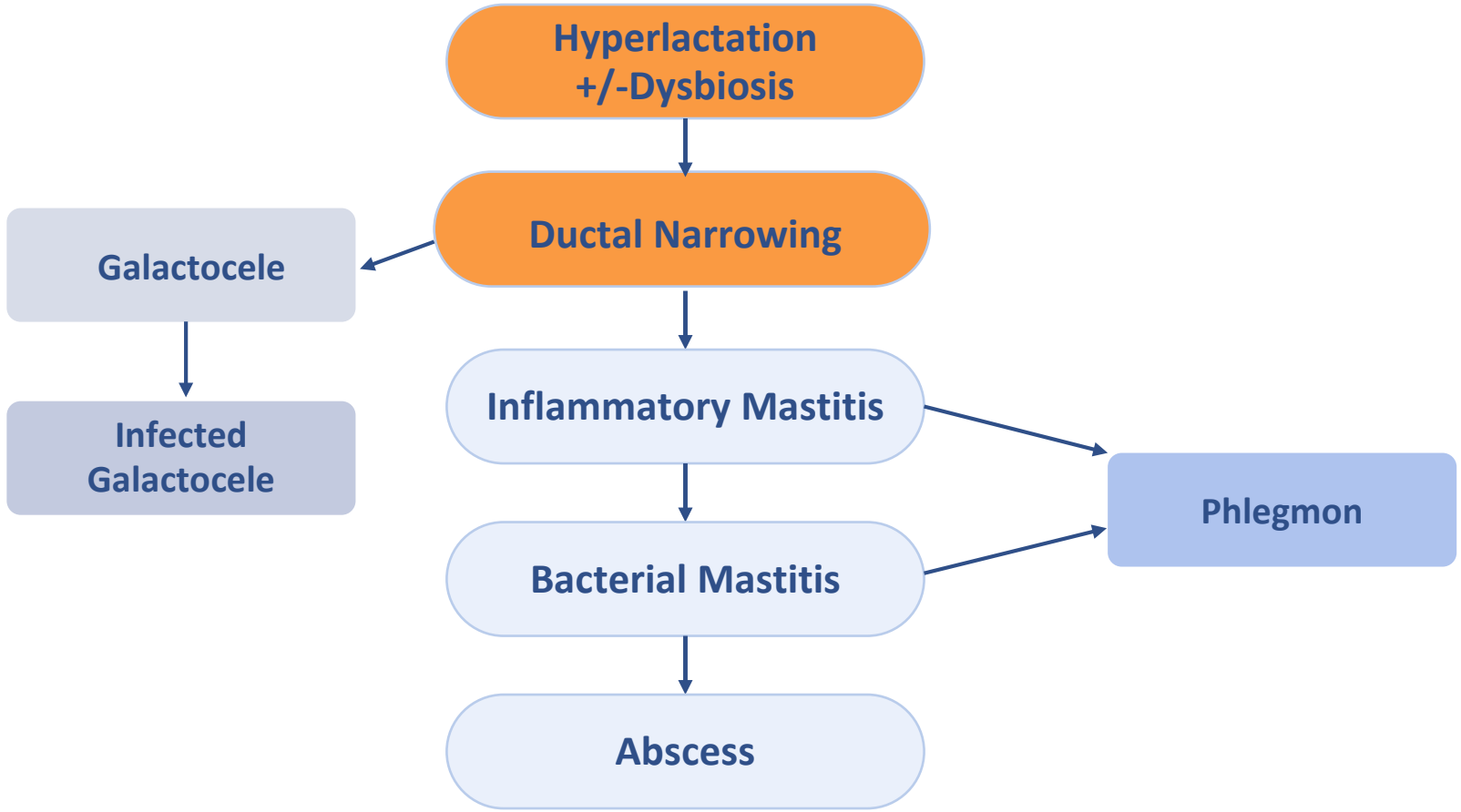
Dr. Shawna Lamond & Dr. Michelle Arnold

Lactational Breast Anatomy

- The breast is a modified sweat gland — it is not a repository like a bladder
- Think of a complex coral structure rather than a river system
- Milk is made in sacs of cells called alveoli
- There are millions of ducts in a breast which carry milk from the alveoli
- Ducts can be narrowed from edema around the ducts or inflammation in the duct



Academy of Breastfeeding Medicine (ABM) Protocol #36 – The Mastitis Spectrum



MASTITIS SPECTRUM

Hyperlactation and Dysbiosis

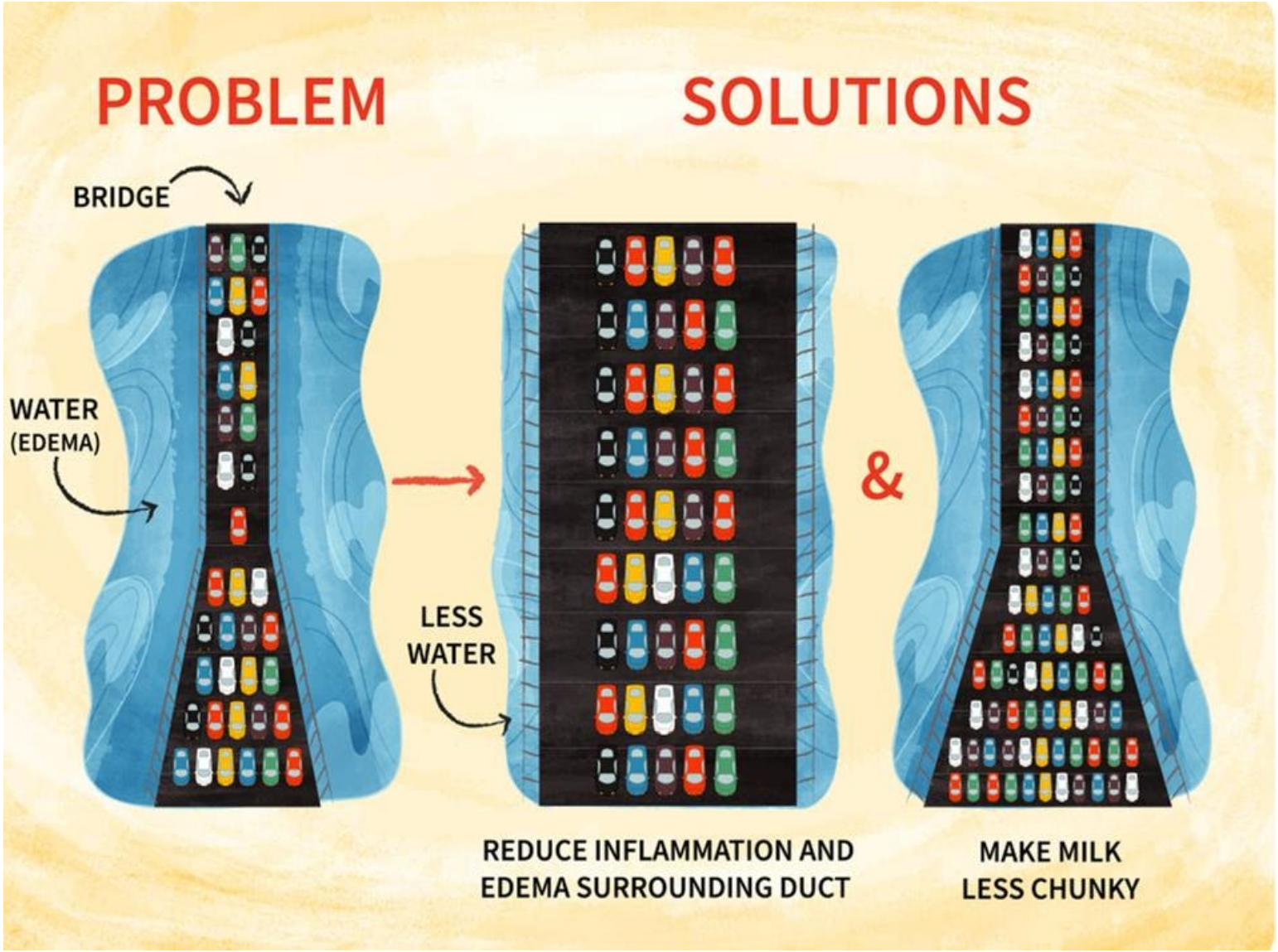
- Hyperlactation predisposes patients to luminal congestion and surrounding inflammation (extraluminal)
- Dysbiosis is a distribution of the milk microbiome (intraluminal/extraluminal)
- Hyperlactation increases the risk of mammary dysbiosis — a vicious cycle, as dysbiosis further narrows the lumen and perpetuates ductal inflammation
- Milk culture can be collected to assess for dysbiosis
- No evidence that “yeast” is the cause of dysbiosis

Importance of treating hyperlactation and the mental health challenges that can be associated with it.

MASTITIS SPECTRUM

Ductal Narrowing

Hyperlactation / Engorgement

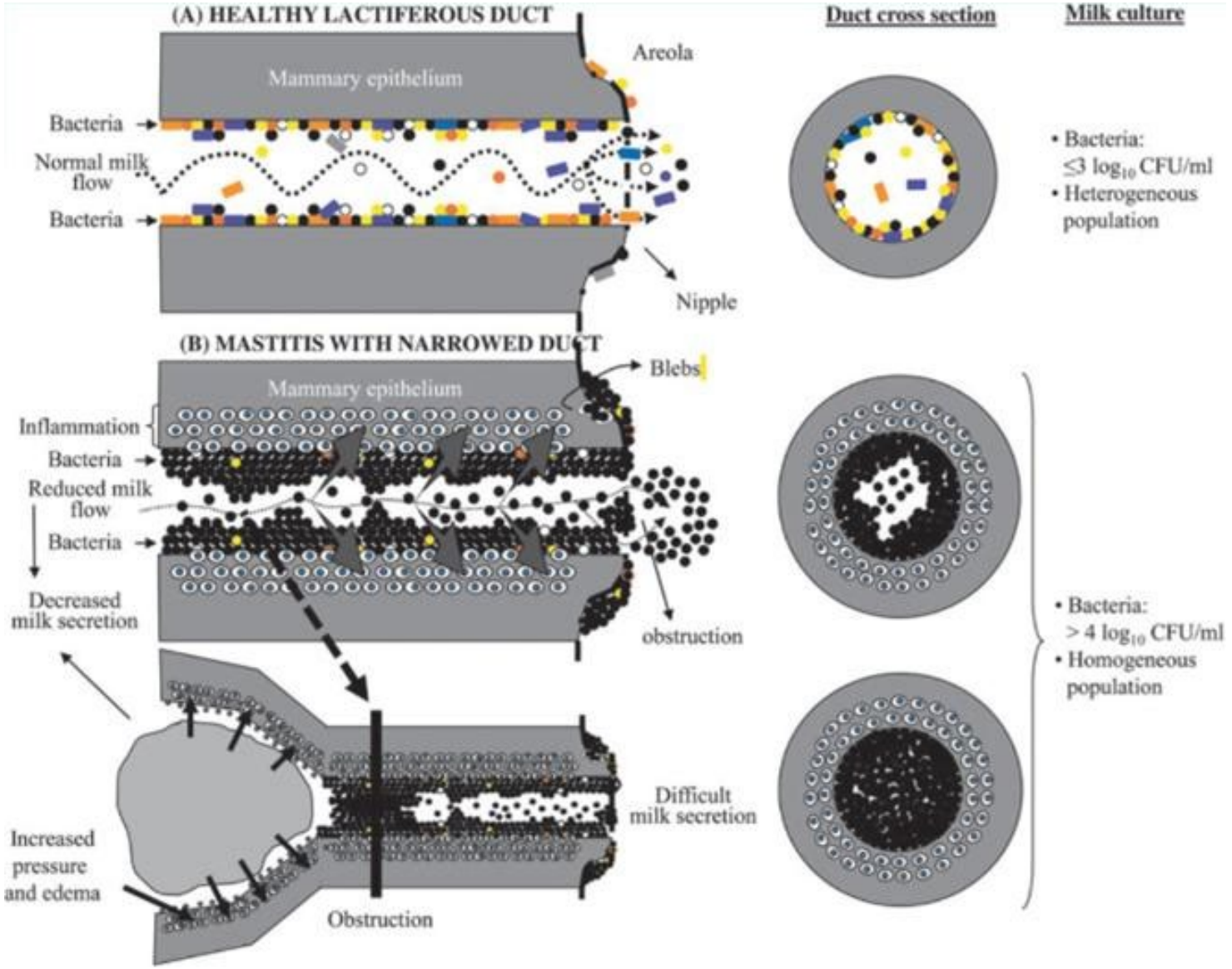


MASTITIS SPECTRUM

Ductal Narrowing

Dysbiosis

More common in patients who exclusively pump.



MASTITIS SPECTRUM

Narrowed Duct Treatment

Breastfeed Physiologically

- Avoid pumping
- Treat hyperlactation
- Educate about normal cellular distension

Do NOT Overfeed on Affected Breast

- Backs up more cars in the traffic jam

Decrease interstitial edema

- Lymphatic drainage

Ice, Ice, Ice

- Ibuprofen (600–800mg TID)
- Acetaminophen (1000mg TID)
- Avoid applying heat or breast massage — causes more tissue damage/inflammation

Encourage Easier Milk Flow Through Narrowed Ducts

- Sunflower lecithin 2400mg TID when engorged (decrease to preventive dose 1200mg/day if recurrent ductal narrowing)

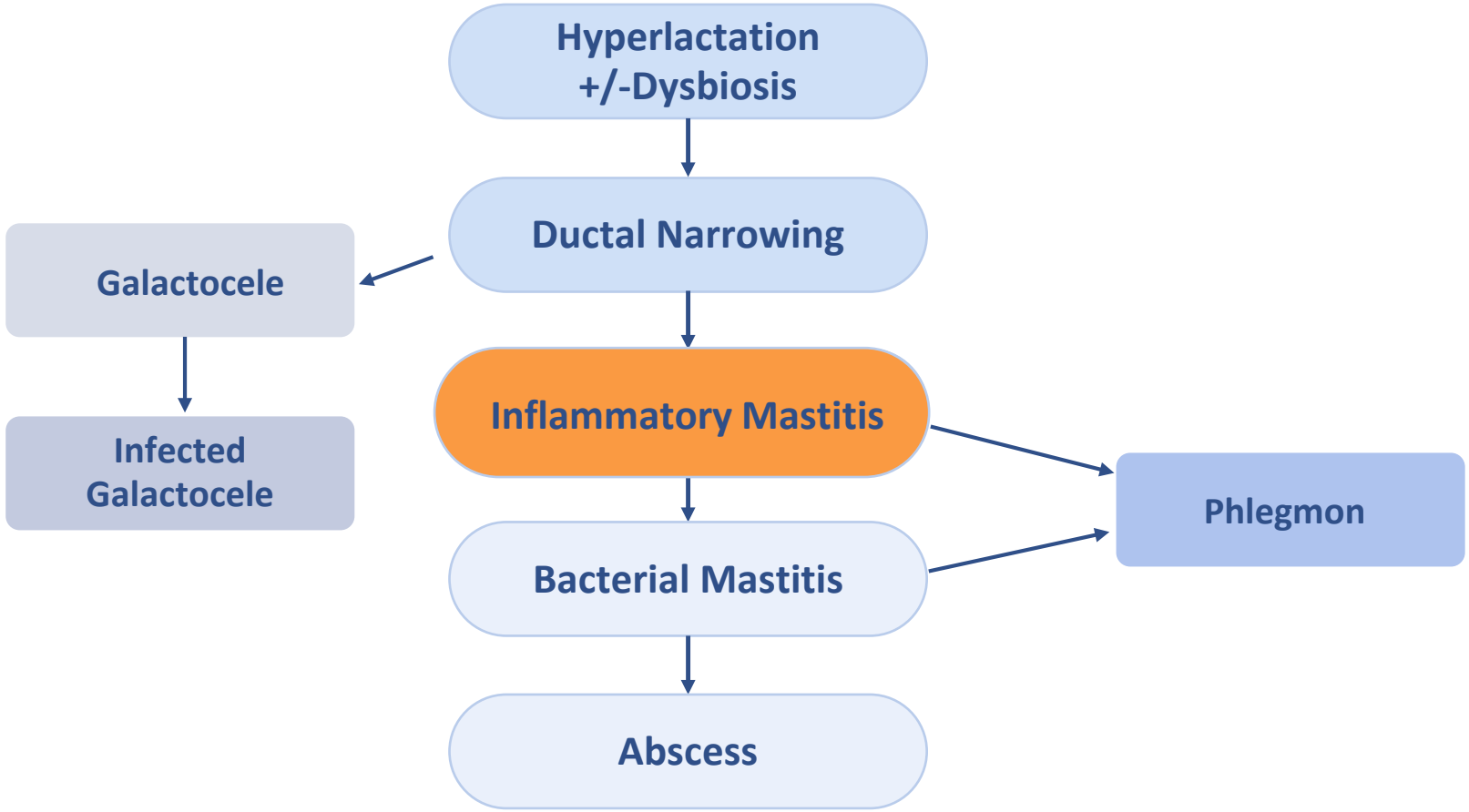
Lymphatic Drainage



Technique

- Very gentle touch/traction of skin — “like petting a cat”
- 10 small circles at junction of internal jugular and subclavian veins, then 10 small circles in axilla
- Continue with light touch massage from nipple towards clavicle/axilla
- Can start during pregnancy if experiencing painful breast growth, and use as needed postpartum for engorgement

MASTITIS SPECTRUM



MASTITIS SPECTRUM

Early Inflammatory Mastitis

Presents with pain, erythema and streaking. Typically resolves in 48hrs with conservative management.

Conservative Treatment

- Ice
- Ibuprofen
- Acetaminophen
- NO MASSAGE
- Avoid heat
- Manage hyperlactation

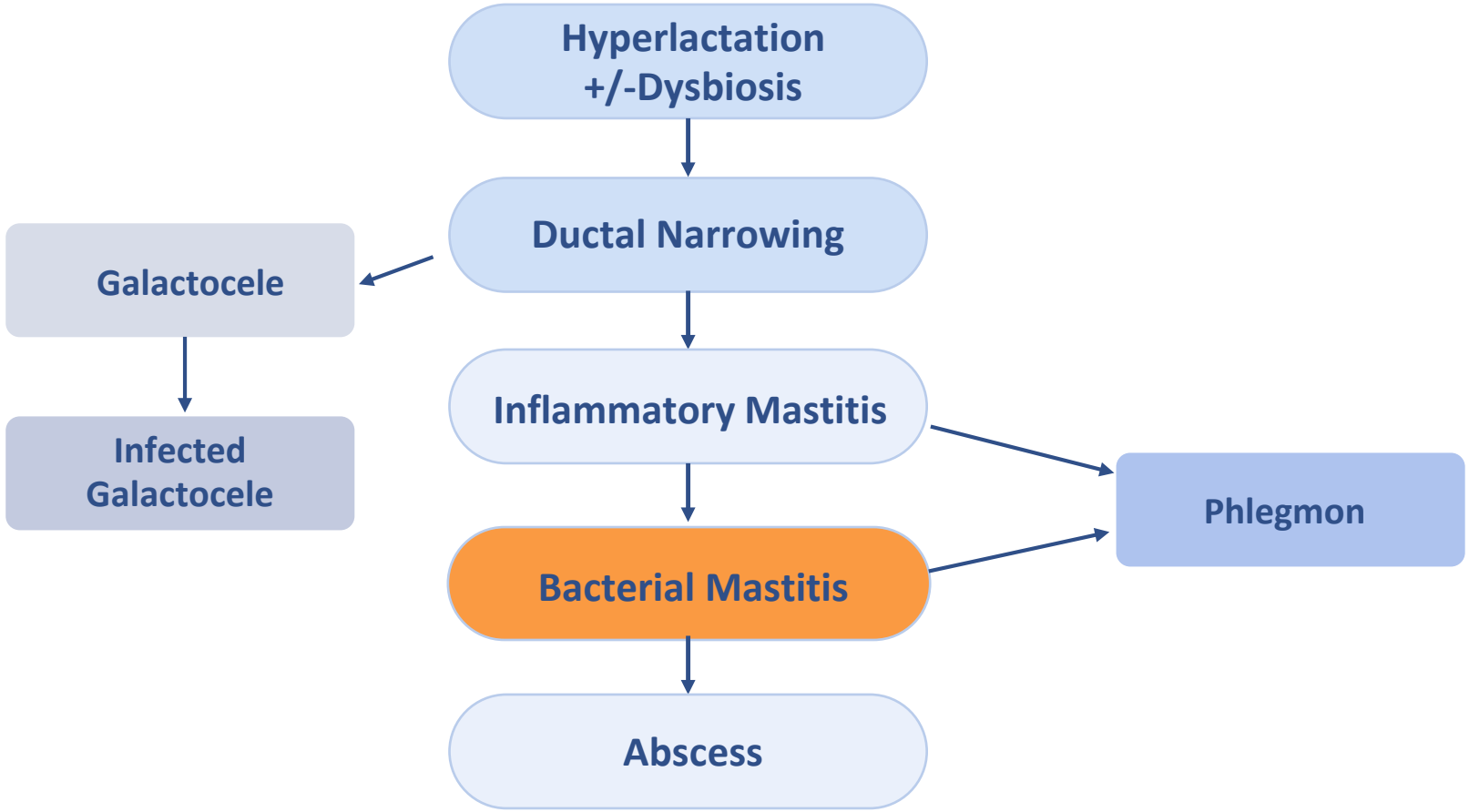
If not improving after 48hrs of conservative treatment, or worsening with development of systemic symptoms, then consider antibiotics.





Mastitis resolved after 72 hours of conservative management.

MASTITIS SPECTRUM



MASTITIS SPECTRUM

Bacterial Mastitis

- Indurated skin, beefy red
- Worsening systemic symptoms that have not resolved with 24–48hrs of appropriate conservative treatment



Often occurs when patients are told to “empty breast more frequently”, pumping or breastfeeding continually, and possibly massaging to “empty breast”

= Tissue damage, cellular death → bacterial infection

Bacterial Mastitis – Antibiotics

Breastmilk is SAFE throughout the mastitis spectrum and when taking antibiotics.

First Line:

Cephalexin 500mg PO QID x7-10day

Cloxacillin 500mg PO QID x7-10day

Suspected MRSA or allergy:

Clindamycin 300mg QID

Trimethoprim-Sulfamethoxazole DS BID

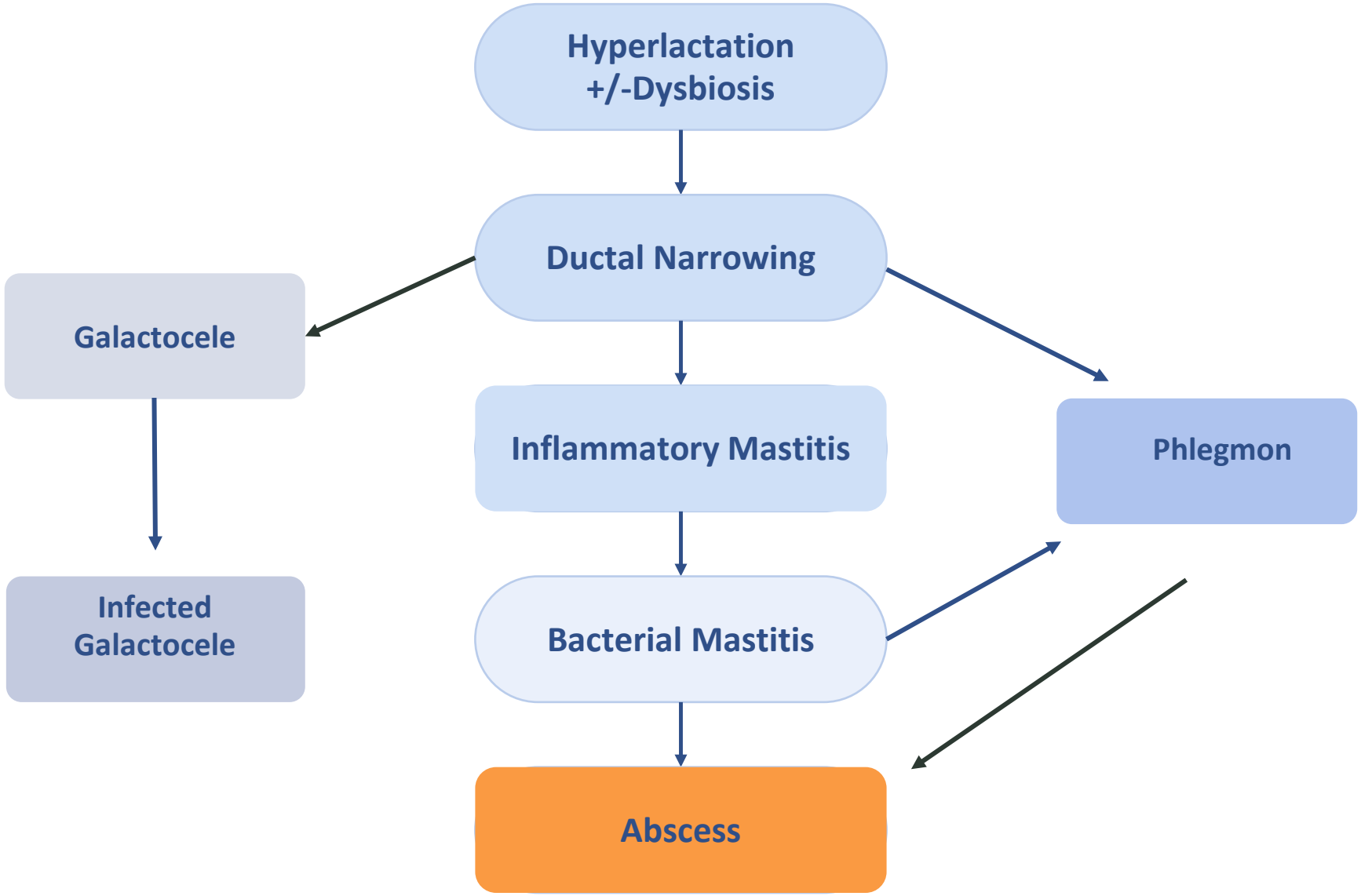
Do not use TMP-SMX in parents of children with G6PD and caution/avoid with premature infants, hyperbilirubinemia and infants <30 days old.

Moderate-Severe:

Cloxacillin 2g IV q6h x7-10 days

Cefazolin 2g IV q6h x7-10 days

- **MASTITIS SPECTRUM**



MASTITIS SPECTRUM

Lactational Breast Abscess

Risk Factors

- Hyperlactation
- Pumping
- MRSA carriers

- Ensure following above conservative treatment recommendations
- **Goal** to expedite definitive treatment to avoid spontaneous rupture and long-term wound care/poor cosmetic outcomes, while supporting ongoing lactation if the patient desires



MASTITIS SPECTRUM

Lactational Breast Abscess – Management

- **Urgent Ultrasound to confirm abscess size**
- <3cm: attempt needle aspiration with 18g needle
- 3–5cm: could attempt needle aspiration, risk of still requiring drain placement. Avoid repetitive aspirations
- >5cm: Penrose or pigtail drain insertion to gravity, avoid nipple areolar complex, no bandages over nipple/areola, no flushing and remove at 3–5 days

Safe and encouraged to continue lactation during treatment. Or supported weaning with cabergoline to avoid engorgement.



MASTITIS SPECTRUM

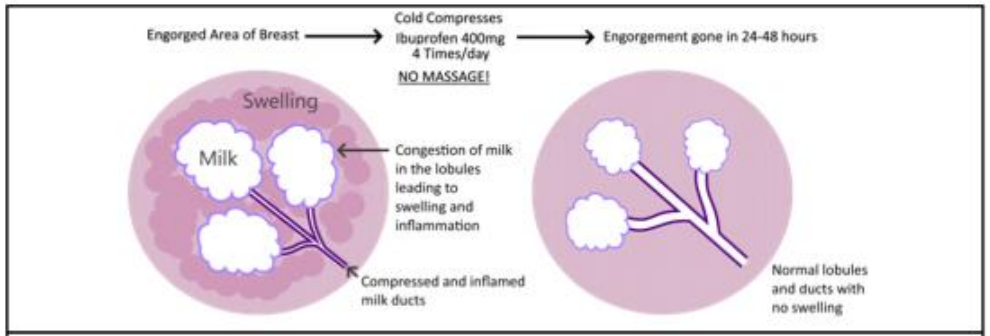
Mastitis Prevention – Patient Education

- Antenatal visit — discuss engorgement/early mastitis treatment
- If planning to pump — discuss volumes

wellfedclinic.com – Engorgement and Mastitis Handout

Well Fed

ENGORGEMENT and MASTITIS



While the ***cause*** of engorgement and mastitis is very full milk sacs, the ***problem*** is the inflammation and swelling in the surrounding tissue and ducts (tubes that take the milk to the nipple). Focusing on aggressive milk removal can make the problem worse. Reducinginflammation with ice and Ibuprofen usually solves the problem. Antibiotics are rarely needed.

DO

- **Ice** For 20 min after feeding/pumping
- **Ibuprofen** 400 mg – 4 times /day with food (Unless you can't take it)
- **Keep Breastfeeding or Removing Milk Gently**
- **Reduce Overproduction** Remove only what the baby needs

Why - The above steps reduce swelling and inflammation and should solve the problem.

DON'T

- No massage or heat
- Don't try to remove more milk than the baby needs
- Don't go longer than 5-6 hours without milk removal
- Don't panic if milk flow is slowed. Once the inflammation and swelling settles down, the ducts will widen and milk will flow again.

Why Not – Removing more milk than needed can increase milk production; making the problem worse. Hard massage can damage the breast. There are no plugs that need to be removed. Heat increases inflammation..

Lecithin

Optional Add On

- **2400mg -3 times/day** when engorged
- **1200mg daily** for prevention

Why - Lecithin takes large globules of fat and breaks them into smaller globules, making it easier for the milk to flow in the inflamed and compressed ducts.

When to Go for Help

- You feel really ill and feverish
- You're not getting better in 48-72 hours
- Large lump not going away with feeds
- You need help to reduce overproduction

Dr. Sarah Hern / Dr. Allison Chapman 2025



Troubleshooting Variants in Infant Oral Anatomy and Determining Solutions

Dr. Shawna Lamond

INFANT ORAL ANATOMY

Anatomy to Consider

- **Size of Baby and Size of Mouth**
- Torticollis / MSK
- Chin Position
- Palate
- Tethered Oral Tissues

INFANT ORAL ANATOMY

Small Baby and/or Small Mouth

- Both a small mouth and a small baby make latching challenging.
- A small mouth makes it challenging to get enough breast tissue for a deep latch that is pain-free and effective for transferring milk.
- Nipple shields can be used temporarily while waiting for growth.
- At-breast supplementer (SNS) can help as well. Parents have to be motivated, as it can be a challenging tool.
- If using a nipple shield, use the largest size that baby can tolerate — we typically increase the size of the shield as baby grows. Goal is to get off the nipple shield.

Example of At-Breast Supplementation



INFANT ORAL ANATOMY

Anatomy to Consider

- Size of Baby and Size of Mouth
- **Torticollis / MSK**
- Chin Position
- Palate
- Tethered Oral Tissues

Torticollis and MSK

- Multiples
- Breech
- Early descent into pelvis with little movement
- Unusual in-utero position
- Latch may be impacted — think about torticollis with nipple/latch pain on one side only
- If you are not comfortable with assessment, utilize physiotherapy early

Asynclitic Gape



MSK and Latching Support

If baby feeds well in a particular position, move to the next breast in the same position. For example, if the latch is comfortable on the left in cross-cradle, then “lazy susan” baby to the right breast in football position. Respect the discomfort and work on changing positions as head and neck ROM improve.



Football position

Home Therapy

- Tummy time: teach different positions — rolled up towel, laying on parent's tummy when lying down, over a knee/leg
- Head righting exercises to strengthen the weaker side of the neck
- Playing and talking to baby to get them to turn to the other side
- Carrying baby facing away, with parent's arm stretching the tight side of the neck
- Use carriers/wear baby rather than having them in a car seat or chair
- Limit time in seats, sling chairs; avoid the swaddle and the SNOO bed
- If bottle feeding, use this time to do stretches



Tummy time

INFANT ORAL ANATOMY

Anatomy to Consider

- Size of Baby and Size of Mouth
- Torticollis / MSK
- **Chin Position**
- Palate
- Tethered Oral Tissues

Infant Chin Position

Normal Variant vs Genetic Conditions

- Micrognathia (PR Sequence)





Retrognathia

Dancer Hold



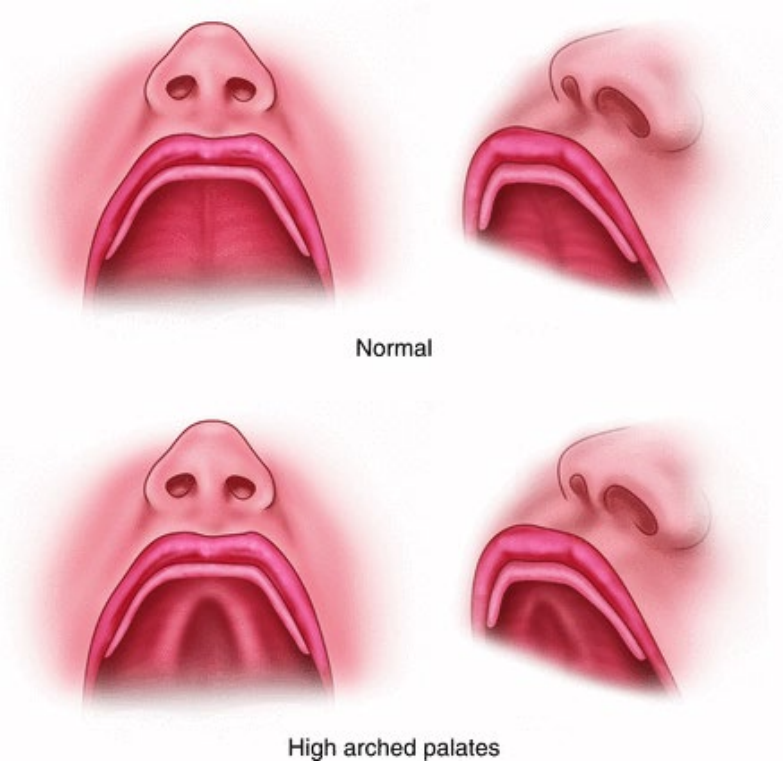
INFANT ORAL ANATOMY

Anatomy to Consider

- Size of Baby and Size of Mouth
- Torticollis / MSK
- Chin Position
- **Palate**
- Tethered Oral Tissues

Palate

- High arched
- Narrow
- Bubble
- Cleft
- Submucosal cleft



High Arched Palate





Strategies

- Latch in football hold — helps get more breast tissue into the roof of baby's mouth
- If the breast is very full, remove some milk — a softer breast can help fill in oral spaces
- If baby cannot grasp despite optimal position, can try a shield
- Mid-taper bottle nipple
- Specialized feeding systems: Dr. Brown's, Pigeon, Medela
- Cleft Palate Clinics
- OT/SLP/Physiotherapy



Can remove some milk by hand expression

INFANT ORAL ANATOMY

Anatomy to Consider

- Size of Baby and Size of Mouth
- Torticollis / MSK
- Chin Position
- Palate
- **Tethered Oral Tissues**

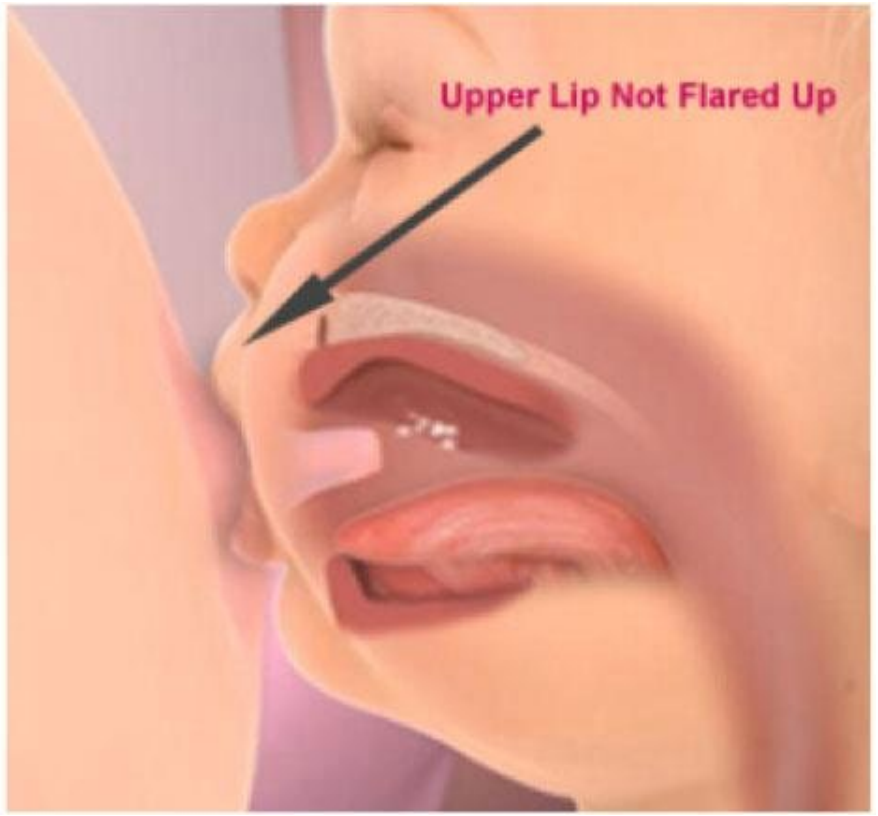
INFANT ORAL ANATOMY

Tethered Oral Tissues

- Labial or lip tie
- Lingual or tongue tie
- Buccal or cheek ties
- Perioral muscle tightness (“purse string mouth”)

Labial or Lip Ties





Goal of Upper Lip in Latching

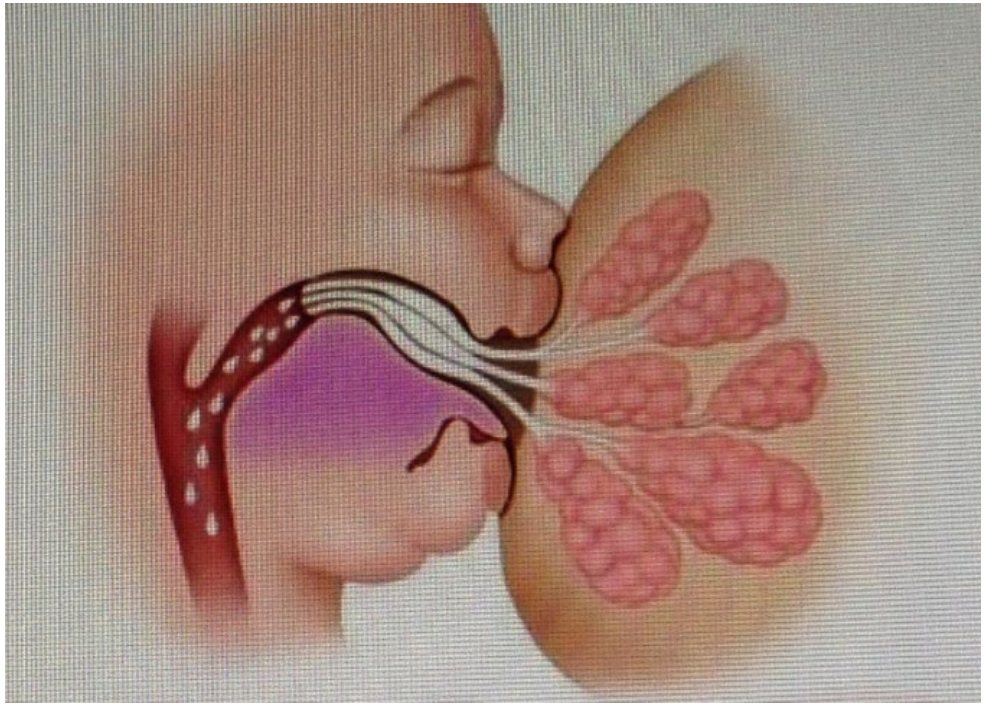
- Goal is to create a seal
- If frenulum is too tight/short, the baby curls the upper lip under to try to create a seal
- This causes discomfort, as additional pressure is exerted from the infant’s upper gum onto the breast
- Crescent-shaped wound where the upper lip/gum rests
- Presence of a labial frenulum is normal — impaired function is the only indication for treatment in infants

INFANT ORAL ANATOMY

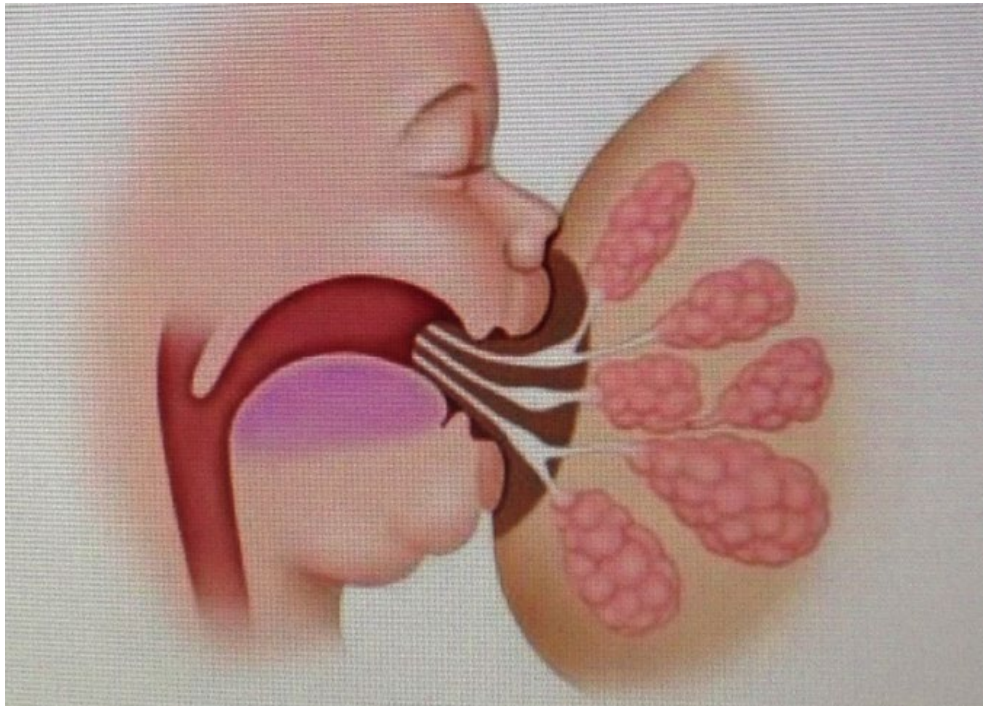
Lingual Frenulum: Review Visual and Functional Exam



Tongue Position Relative to the Breast



Normal tongue position



Tongue-tie

Function of Tongue

- More complex movement
- Tongue is required to extend, lift and cup
- Peristaltic wave
- Extension past the lip, not just the gum
- Elevation to mid-mouth or above
- Lateralization to corners of mouth with tip of tongue, not just body
- Cupping: edges and body of tongue cup the breast

Strategies

- Can try to micro-adjust the upper lip (roll out or evert), and with tongue-tie, pull down on baby's chin
- With tongue-tie, a prone feeding position is helpful to use gravity to help the tongue come forward in relation to the lower gum
- Worst position for feeding is baby lying on a breastfeeding pillow with the parent coming over baby to feed (tongue falls posterior in relation to the lower gum)
- With lip-tie, an upright feeding position — to "hang" baby off the upper lip — can help create a seal without the infant compressing the upper lip

Summary

- Assessment of oral mechanics of infant feeding is complex
- Feeding interface also involves maternal anatomy, types of bottles/flow, etc.
- Restriction of infant movement negatively impacts latch and maternal nipple pain, and reduces milk removal from the breast — this increases the risk of breast congestion and mastitis

Lingual frenotomy should be done only after a skilled provider assesses oral anatomy and tongue function, and optimizes all other variables.



Pumping Pearls

Tiffany Holdsworth-Taylor

PUMPING PEARLS

1. Pumping is trending, but not without risks
2. Pumping and dumping
3. Who, when, and how to pump
4. Flange fitting



PUMPING PEARLS

Pumping is Trendy! But Not Without Risks

Risks of pumping:

- Nipple trauma and dysbiosis
- Difficulty regulating supply (hypolactation, hyperlactation)
- Mastitis spectrum
- Fuss/cry/sleep issues and reflux
- Milk storage, cleaning and contamination risks
- Changes to milk flavour — baby may not take it
- Equipment costs and stress
- Mental health load
- Early weaning
- High-risk group in emergencies



PUMPING PEARLS

Who, When and How to Pump

Indications

- If any separation
- Baby not latching, or not latching well
- Preterm or ill infant
- Any supplementation or feeding of baby away from breast/chest
- If nipples need to heal
- To increase supply
- Returning to work
- Milk donation
- Parent choice
- Medications – e.g. pumping and dumping

PUMPING PEARLS

Pumping and Dumping

- May be required with certain medications, but is often recommended “out of an abundance of caution” for medications that are actually safe during lactation
- Must weigh the risks of the medication against the risks of pumping and dumping:

- Risks of formula
- Low milk supply
- Nipple trauma
- Engorgement and pain
- Mastitis spectrum
- Mental health
- Oversupply
- Difficulty returning to latching
- Early weaning

See the Physicians Breastfeeding Guide, page 56, for more information on breastfeeding and medications.

PUMPING PEARLS

How to Pump: Pump Settings

Cycles or Modes

- 40–60 cycles/min mimics a latched baby
- Primary pumps and hand pumps allow for changes in speed
- Other pumps have 2–3 modes with different speed options

Vacuum

- 100–250mmHg (infant suck ~150mmHg)
- Higher is not necessarily better — can increase inflammation and ductal collapse
- Should feel comfortable

How to Pump: Pumping Routines



Triple Feeding

- Regime of **breastfeeding**, **pumping** & **supplementing**
- Participants obsessed – "every drop counts"
- It was "all-consuming", "soul destroying"
- Detrimental to their mental health & well-being
- **Affected ability to enjoy and connect with baby**
- "Hamster wheel" (Farah, 2016)

PUMPING PEARLS

How to Pump: Pump Types

Pump Type	Description	Pro	Con
Manual / Hand Pump	Requires the user to move a handle to generate suction.	Portable; no electricity needed; effective	Laborious, especially if using frequently
Wearable	Entire pump is one unit with no tubing; tucks into the user's bra.	Convenient, portable; good for an established supply, pumping occasionally	Not effective at milk removal; can significantly decrease supply
Electric – Secondary	Lower quality pump; may be 1x or 2x, typically not able to alter speed beyond 1–2 settings.	Affordable; more effective than wearables	Not effective for establishing/increasing supply; not convenient
Electric – Primary	High quality 2x personal pump; settings allow changes to suction and speed.	Effective for establishing and increasing supply	Larger, less convenient, expensive; wearable-cup flanges (if included) are less effective
Multi-User (Hospital/Rental)	Hospital or rental-grade pump (note: "hospital grade" is no longer an official term).	Most effective for establishing and increasing supply	Large, inconvenient, often needs to be plugged in; expensive











PUMPING PEARLS

Flange Type Can Be Just as Important as Pump Type





PUMPING PEARLS

Flange Size Can Make All the Difference

Original Research

international lactation consultant association

Journal of Human Lactation
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Flange Size Matters: A Comparative Pilot Study of the Flange FITS™ Guide Versus Traditional Sizing Methods

Lisa A. Anders, PhD, RN, IBCLC[1], Jeanette Mesite Frem, MHS, IBCLC, RLC, CCE[2], and Thomas P. McCoy, PhD, PStat[3]

Abstract

Background: Pumping is a common practice in the United States, but it can be uncomfortable and lead to concerns about milk supply. The fit of the flange, or breast shield, used while pumping can contribute to or alleviate these problems. Flanges are available in a wide variety of sizes, and there are inconsistencies in guidance provided by healthcare providers and pump manufacturers for parents choosing a size. There have been no studies comparing different methods of sizing in terms of comfort and milk output.

Research Aims: The aim of this research was to examine differences in milk output and comfort using two methods of flange sizing.

Method: A within-subject cross-over design with a convenience sample of parents exclusively feeding their own human milk was used to compare comfort and milk yield between using smaller-fit and standard-fit flanges. Participants pumped for 1 week with each set of flanges and recorded milk output and comfort outcome measures. Data were collected on participant demographics, nipple measurements, and flange sizes used.

Results: When compared to the newer small-size fitting, participants using the standard fit flanges had significantly less milk output (mean difference = −15.0 g, 95% CI [−25.0, −5.0], $d = -0.51$, $p = 0.004$) and less comfort (mean difference = −1.2, 95% CI [−1.6, −0.91], $d = -1.23$, $p < 0.001$).

Conclusion: Flange fitting is a process that should be individualized to the patient and may require a trial of one or more sizes during a pumping session. Smaller sizes determined using this individualized process and starting with nipple tip measurement may be used without compromising milk output or comfort.

Keywords
breastfeeding, breastfeeding experience, breast pumping, human milk, human milk expression, lactation

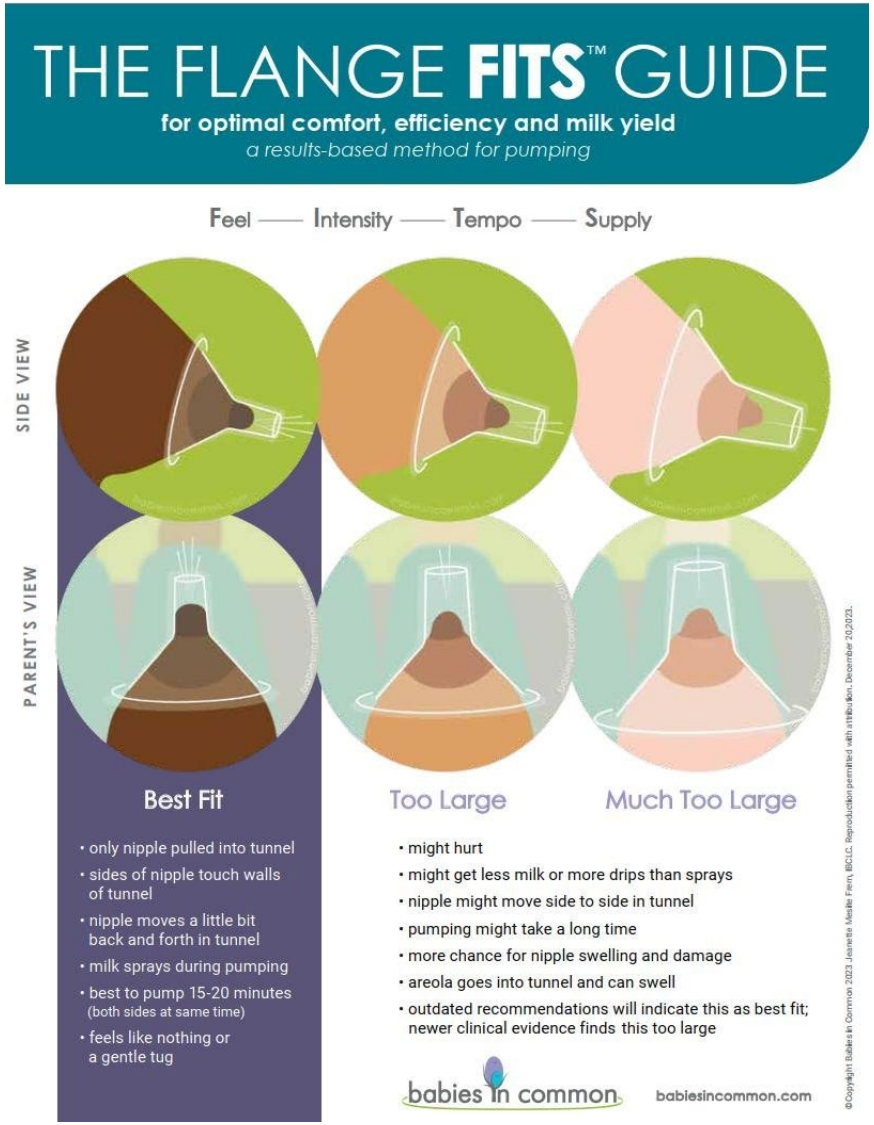
It is well-established that human milk is optimal nutrition for infants, and it is recommended that infants receive human milk exclusively for the first 6 months of life (Meek et al., 2022). Globally, this goal is met for 48% of infants less than 6 months of age. Seventy-one percent of infants still receive any human milk at 1 year of age. While breastfeeding is traditionally thought of as an act taking place at the breast with the infant removing milk directly, breastfeeding, as defined by the World Health Organization (WHO), encompasses any method by which human milk is expressed from a breast. This includes any human milk that is fed to an infant, whether the milk is the birth parent's milk or the milk of another lactating person (Noel-Weiss et al., 2012). Many parents around the world who feed human milk to their infants use mechanical pumps to express their milk (pumping) to feed to their infants via bottles or other methods.

Pumping is a common practice. In the United States, 94% of parents feeding human milk have pumped at some point in the first year, and up to 7% pump exclusively (O'Sullivan et al., 2019). In Hong Kong, China, and Singapore, 19.8%, 22.6%, and 16.5% of human milk feeding parents, respectively, have been found to exclusively pump their milk exclusively rather than feed directly at the breast (Bai et al., 2017; Jiang et al., 2015; Pang et al., 2017). Pumping human milk is also critical for medically fragile infants, such as those born prematurely (Belfort et al., 2022), and is used as a strategy to increase milk supply (Dietrich Leurer et al., 2020).

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Email: Laanders2@uncg.edu



Find IBCLC and Lactation Medicine providers with training in pumping at:

- www.BCLCA.ca
- Babiesincommon.com/directory



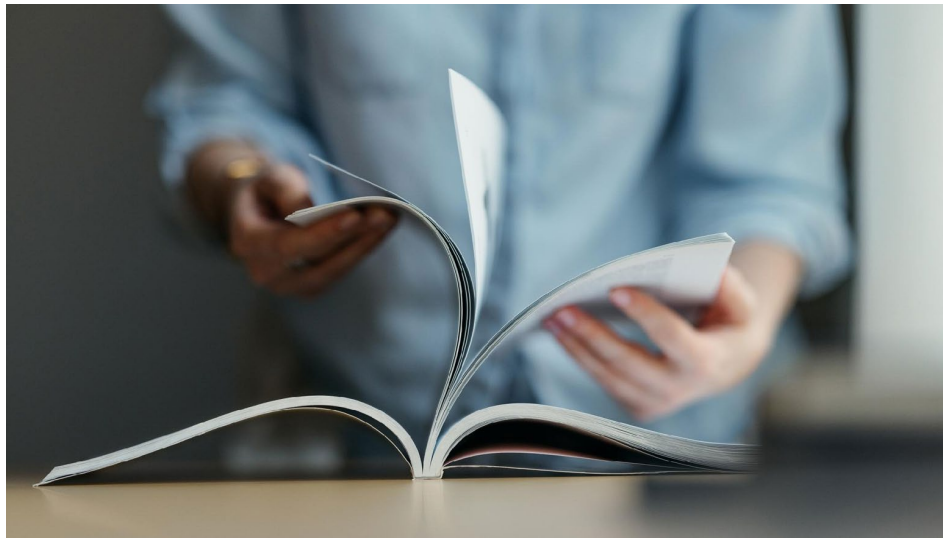
Physician Breastfeeding Guide

Dr. Virgina Clark

Physician Breastfeeding Guide – What Is It?



- 5-min video: Introduction to the Physician Breastfeeding Guide — breastfeedingchange.ca
- 20-min narrated video: Case Studies — breastfeedingchange.ca



Breastfeedingchage.ca

Physician Breastfeeding Guide – What Is It?



What is it?

- Made in IH! Evidence-informed practice guide for the healthy term infant.



The Guide is not just for Physicians

- The Guide is not just for physicians — it's for family practitioners, Ob/Gyns, pediatricians, midwives, maternity care nurses, public health nurses, nurse practitioners, doulas and others.
- Developed by over 50 HCPs, mostly from the IH region, also specialists across Canada/USA., including Shawna, Michelle, Tiffany and myself.

22

physicians were writers/reviewers

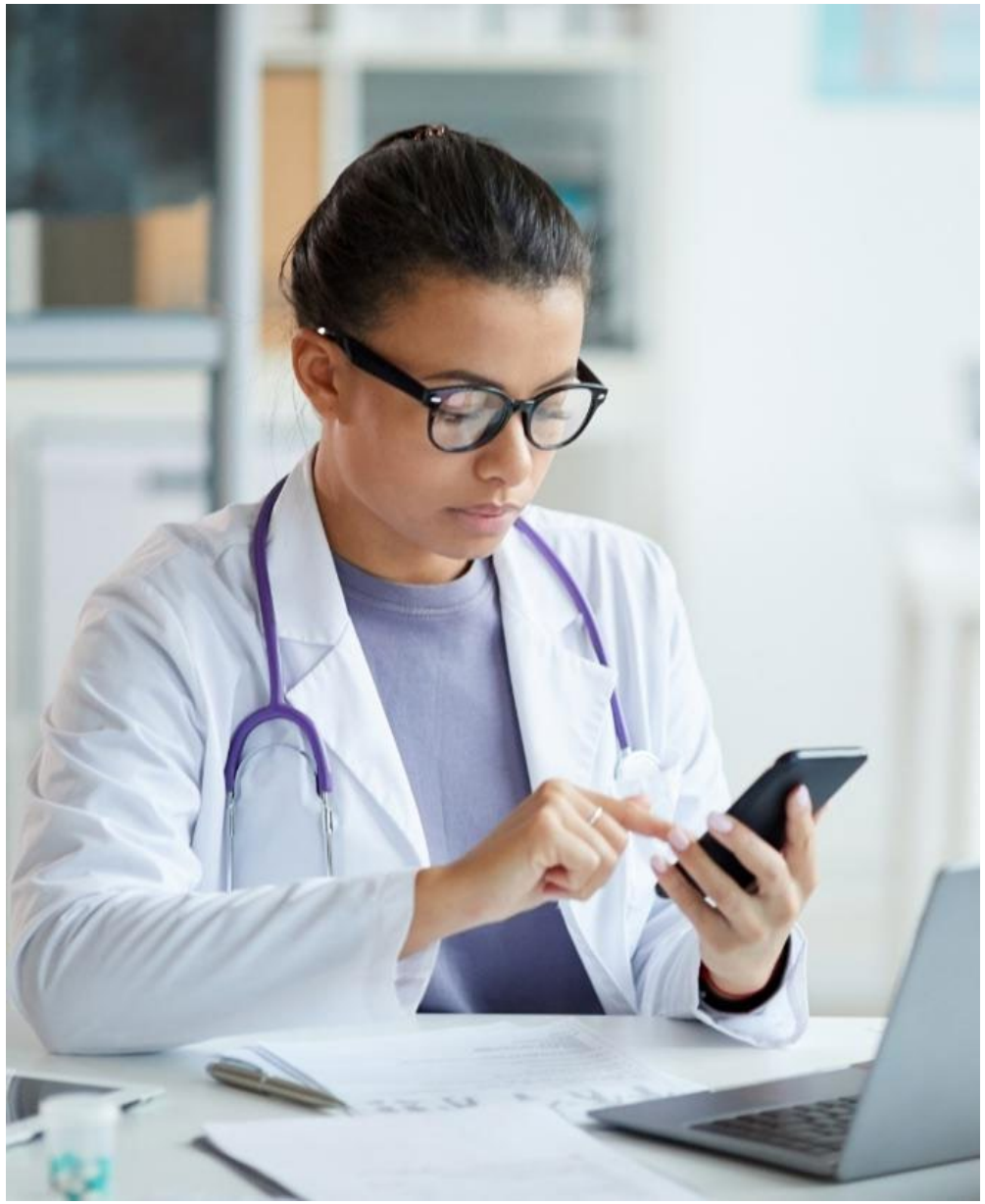
Can’t Find What You Want in the Guide?

Then go to Pathways® BC

Pathways
www.pathwaysbc.ca

pathwaysbc.ca/login

The Physician Breastfeeding Guide is for the healthy term infant. Pathways® has information on breastfeeding low birth weight babies, as well as other topics such as use of marijuana, alcohol and other substances, breastfeeding an adopted baby, and resources for transmen wanting to chestfeed.



Sections in the Guide

- Section 1 – Prenatal
- Section 2 – Hospital
- Section 3 – Postpartum
- Section 4 – BFI (Baby-Friendly Initiative)
- Section 5 – Resources & Referrals

- **0–72 Hour Breastfeeding Algorithm**
- **12 Breastfeeding Practice Tips**
- **Troubleshooting Common Breastfeeding Problems**

0–72 Hour Breastfeeding Algorithm

Early skin-to-skin helps establish latch.



Enlarged copies of algorithm being provided across IH on maternity wards.

0–72 HOUR BREASTFEEDING ALGORITHM

BIRTH TO TWO HOURS (VAGINAL OR CAESAREAN)

- Initiate immediate skin-to-skin contact between newborn and mother. In emergencies, when mother is not able, then skin-to-skin with a support person. See Practice Tip 1.
- Ensure uninterrupted skin-to-skin for at least an hour, until first breastfeed is finished, or as long as mother wishes.
- Defer baby's first bath until at least 24 hours (unless early bath indicated). See 1
- Be patient to allow time for baby to go through the instinctive breast crawl stages. See 2 Let baby lead.
- Support dyad with position and latch. See 2 Affirm with mother what is going well.
- Help with hand expression if baby has not latched or is separated from mother. See 4 Feed baby colostrum.
- Do a breastfeeding assessment. See 11

IS BABY FEEDING EFFECTIVELY? ARE MOTHER'S BREASTS PAIN FREE?

YES

ROUTINE CARE & ASSESSMENTS

- Complete newborn assessment See *PSBC Newborn Guideline, 2023*.(46)
- *Sudden Unexpected Postnatal Collapse* (SUPC) is rare but the risk is highest during the first two hours of life; monitor closely.(47)
- Encourage continuous skin-to-skin. See 1
- Do not separate dyad unless medically indicated.
- Observe a feed. Assess latch, position, active transfer of colostrum/milk; assist as needed. See 2, 3, 5 & 11
- Discuss early feeding cues (*see page 31*), responsive feeding, and normalcy of cluster feeding. See 6
- Show how to soothe baby without pacifiers or swaddling. See 6
- Teach/review hand expression. See 4
- Watch for 5+ feeds in the first 24 hours, and 8+ feeds every 24 hours thereafter.(46) See 11
- Assess number of voids and stools in each 24-hour period. See 11
- Teach how to prevent nipple pain and engorgement. See 10

NO

1-6 HOURS *IN ADDITION* TO ROUTINE CARE

- Reassure parents; it is **common** for newborns to need recovery time.
- Teach parents early feeding cues; wake baby by 6 hours after birth. See 11
- Hand express at least every 2 to 3 hours for as long as long as baby's latch is ineffective. See 4
- Offer any available colostrum to baby by alternate feeding method. See 9
- Assess position, latch and suck; support as needed. See 2, 5 & 11. This is more important than voiding and stools in first 24 hours.
- Ask about breast or nipple pain and manage. See 10
- Avoid nipple shields. See 3
- If supplementation is needed, use correct type, volume and method. Manage neonatal hypoglycemia, e.g. use Glucogel® and colostrum as first choice. See 8 & 9
- **IMPORTANT NOTE:** Few healthy term infants require a supplement in the first 24 hours, even if baby is not latching and there is little or no colostrum. See 8

6-24 HOURS *CONTINUE ABOVE*, PLUS:

- Teach breast compression and switch nursing, to maximize transfer of colostrum/milk. See 5
- Gently sweep finger inside baby's mouth to assess frenulum and palate. A skilled provider may need to do a Focused Tongue-Tie Assessment. See 11 and page 39
- If latching concerns continue, IBCLC consult is recommended.

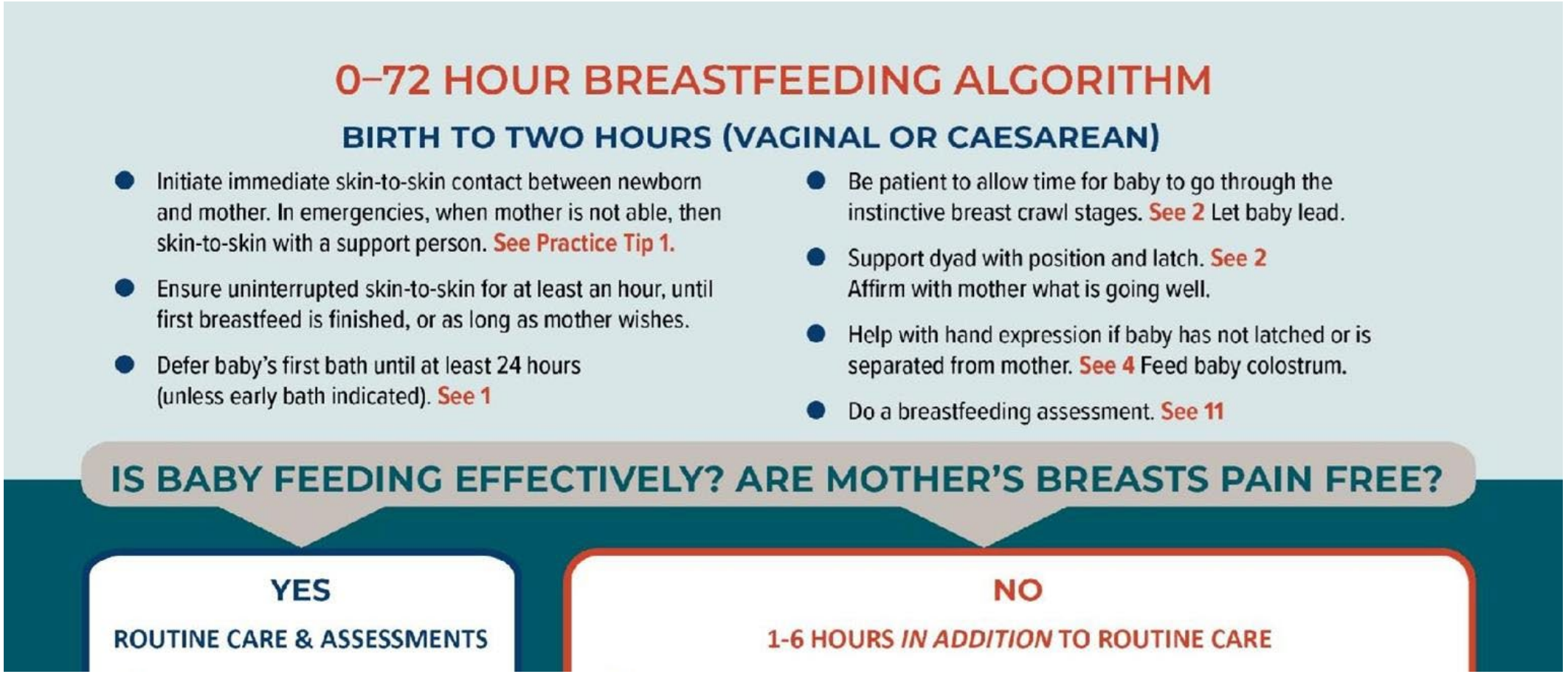
24-72 HOURS *CONTINUE ABOVE*, PLUS:

- Repeat PSBC newborn assessment.
- Re-assess if baby is receiving sufficient expressed colostrum/milk. See 8, 9 & 11
- Consider using electric hospital grade pump (in addition to hand expression); use a 'hands-on' technique with pump. See 7

DISCHARGE PLAN: Answer parents' questions. Give them information about community peer support, and a plan to discontinue any supplementation for breastfeeding mothers. Communicate plan to PHN or IBCLC. Delay discharge if timely follow-up is not available.

Page 17 of the Guide

Top One-Third of the Algorithm



12 Breastfeeding Practice Tips

1. Skin-to-Skin

2. Latch and Positions

3. Inverted Nipples — Concerns about Nipple Shields

4. Hand Expression

5. Maximize Milk Transfer — Breast Compression and Switch Nursing

6. Cluster Night Feeding and Soothing

7. Pumping — Later Option for Milk Expression

8. Supplementation

9. Alternate Feeding Methods

10. Nipple Pain & Breast Fullness or Engorgement

11. Breastfeeding Assessment

12. Q&A with Patients

Patient Handouts & Videos



The Practice Tips can be used during prenatal visits, in-hospital, and postpartum office visits.

PHYSICIAN BREASTFEEDING GUIDE

Troubleshooting Common Breastfeeding Problems

Pages 59–60 of the Guide



	Baby Not Latching	Sore or Cracked Nipples	Breast Engorgement	Low Milk Supply
COMMON CAUSE	Baby did not get immediate and uninterrupted skin-to-skin after birth Sleepy baby, typically due to labour and delivery meds Shallow latch and poor position	Shallow latch and poor position	Excess IV fluids given to mother during labour Natural process of milk coming in at day two to five Infrequent or irregular feeding	Shallow latch Infrequent feeding
STEPS TO RESOLVE	1. Skin-to-skin (page 18) 2. Hand express and collect colostrum/ milk until baby is ready to feed (pages 23 and 28) 3. Gently wake sleepy baby (page 34 #2) 4. Assist with latch and positions; try laid-back, side-lying or cross-cradle (pages 19–21)	1. Assess latch and position (pages 19–21) 2. Assess nipple and areola damage (page 29) 3. Lubricate damaged nipples with balm ointment (page 29) 4. Hydrogel pads for deep wounds (page 29) 5. Pain medication as needed (page 29)	1. Hand expression (or after day three, pumping) (page 23) 2. Lymphatic massage (page 30) 3. Reverse pressure softening (page 30) 4. Frequent breastfeeding (page 32)	1. Assess latch (pages 19–21) 2. Skin-to-skin (page 18) 3. Frequent breastfeeding (page 32) 4. Breast compression while breastfeeding (page 24) 5. Switch nursing (page 24) 6. Hand expression and/or pumping (page 23 and 26) 7. Galactagogues, if needed (pages 44–47)
KEY STEP	**Baby's mouth is wide open before latch**	**Laid-back position for a good latch**	**Hand expression**	**Skin-to-skin**


Q&A



Thank You

This presentation is posted at breastfeedingchange.ca under the "Physician & HCP's Breastfeeding Guide" tab as well as internally on the IH Lactation and Newborn Feeding TeamSite.

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