



Supporting Breastfeeding/Chestfeeding Families in Primary Care

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Terminology

We talk about breastfeeding, but it's under the umbrella of "human milk feeding"

- Mother's own milk is preferred, donor milk preferred to milk substitutes
- Some parents may be exclusive pumpers

Not everyone who lactates identifies as a mother or female

- "Lactating parent", "chest feeding", "body feeding"
- If unsure of the patient's preferred terminology, ask!

Why spend time learning about breastfeeding?

Although more than 80% start out breastfeeding, less than 1 in 4 continue to 6 months as recommended, with even lower rates in minoritized groups

In a national study, 85% of mothers wanted to breastfeed for 3 months or more, but less than 1 in 3 did

The background of the entire page is a microscopic view of breast milk, showing numerous circular droplets of varying sizes. The droplets are light blue and have a slightly darker blue outline, giving them a three-dimensional appearance. They are densely packed and fill the entire frame.

about

why

abcs

droplet

join us

downloads

español

You are looking at breastmilk under a microscope. Each drop is alive, and uniquely tailored for each baby.

<https://firstdroplets.com/science/>

Key Breastfeeding Indicators of Infants Born in 2020, National Immunization Survey – Child 2021–2022

Key Breastfeeding Indicators	Current Rates
Percentage of infants who are breastfed: Ever.*	83.1
Percentage of infants who are breastfed: At 6 months.*	58.2
Percentage of infants who are breastfed: At 1 year.*	37.6
Percentage of infants who are breastfed: Exclusively through 3 months.*	45.3
Percentage of infants who are breastfed: Exclusively through 6 months.*	25.4
Percentage of breastfed newborns who receive formula supplementation within the first 2 days of life.*	20.8

*Current rates represent infants born in 2020, [National Immunization Survey – Child 2021–2022](https://www.cdc.gov/nis/).

Infant Benefits

Rates of multiple acute and chronic medical conditions are reduced by breastfeeding

Quality meta-analyses show that breastfeeding is associated with a 36% reduced risk of SIDS

Section on Breastfeeding. Breastfeeding and the use of human milk. Pediatrics. 2012 Mar;129(3):e827-41. doi: 10.1542/peds.2011-3552. Epub 2012 Feb 27. PMID: 22371471.

Condition	% Lower Risk ^b	Breastfeeding	Comments	OR ^c	95% CI
Otitis media ¹³	23	Any	—	0.77	0.64–0.91
Otitis media ¹³	50	≥3 or 6 mo	Exclusive BF	0.50	0.36–0.70
Recurrent otitis media ¹⁵	77	Exclusive BF ≥6 mo ^d	Compared with BF 4 to <6 mo ^d	1.95	1.06–3.59
Upper respiratory tract infection ¹⁷	63	>6 mo	Exclusive BF	0.30	0.18–0.74
Lower respiratory tract infection ¹³	72	≥4 mo	Exclusive BF	0.28	0.14–0.54
Lower respiratory tract infection ¹⁵	77	Exclusive BF ≥6 mo ^d	Compared with BF 4 to <6 mo ^d	4.27	1.27–14.35
Asthma ¹³	40	≥3 mo	Atopic family history	0.60	0.43–0.82
Asthma ¹³	26	≥3 mo	No atopic family history	0.74	0.6–0.92
RSV bronchiolitis ¹⁸	74	>4 mo	—	0.26	0.074–0.9
NEC ¹⁹	77	NICU stay	Preterm infants Exclusive HM	0.23	0.51–0.94
Atopic dermatitis ²⁷	27	>3 mo	Exclusive BFnegative family history	0.84	0.59–1.19
Atopic dermatitis ²⁷	42	>3 mo	Exclusive BFpositive family history	0.58	0.41–0.92
Gastroenteritis ¹³⁻¹⁴	64	Any	—	0.36	0.32–0.40
Inflammatory bowel disease ³²	31	Any	—	0.69	0.51–0.94
Obesity ¹⁵	24	Any	—	0.76	0.67–0.86
Celiac disease ³¹	52	>2 mo	Gluten exposure when BF	0.48	0.40–0.89
Type 1 diabetes ¹³⁻⁴²	30	>3 mo	Exclusive BF	0.71	0.54–0.93
Type 2 diabetes ¹³⁻⁴³	40	Any	—	0.61	0.44–0.85
Leukemia (ALL) ¹³⁻⁴⁸	20	>6 mo	—	0.80	0.71–0.91
Leukemia (AML) ¹³⁻⁴⁵	15	>6 mo	—	0.85	0.73–0.98
SIDS ¹³	36	Any >1 mo	—	0.64	0.57–0.81

Parent and community benefits

Improved postpartum blood loss and faster uterine involution

Improved birth spacing

Decreased rates of depression, breast cancer, ovarian cancer, diabetes, rheumatoid arthritis, hypertension, hyperlipidemia, hypertension, and cardiovascular disease

Reduced healthcare costs

Reduced parental absenteeism from work

Reduced cost, water/fuel use, and carbon emissions from formula production

Why us?

- Family physicians are uniquely positioned to make a difference in parent and child breastfeeding experience
- Primary care interventions are effective
- Parents highly value physician support





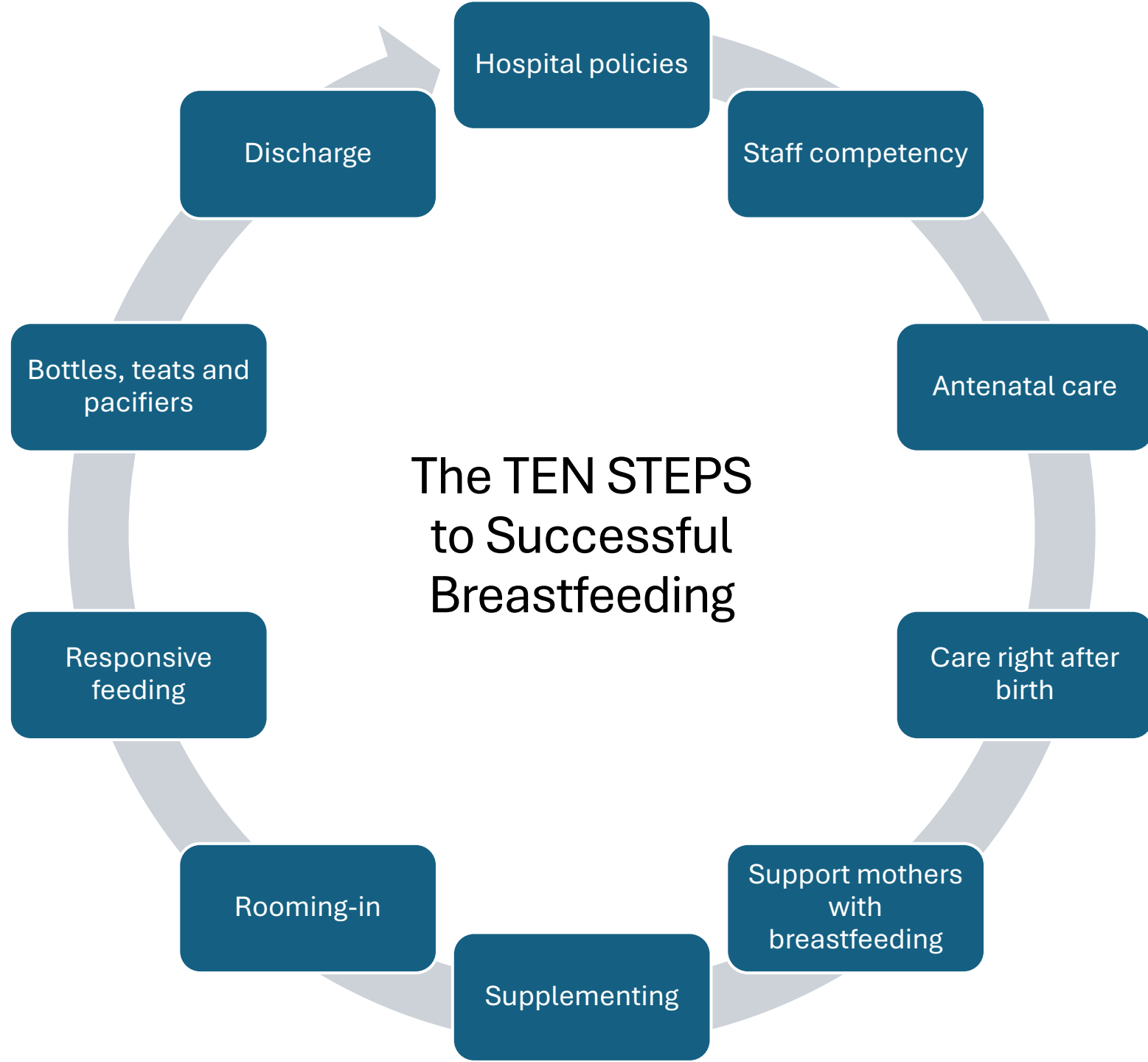
Baby-Friendly Hospital Initiative

Led by UNICEF and the WHO

Upholds the Ten Steps to Successful Breastfeeding

Assesses and accredits birthing facilities

Supports understanding and enthusiasm for best practice infant feeding



Learning Objectives

1

Describe human milk intake patterns for healthy infants

2

Review resources to determine if a medication is compatible with lactation

3

Discuss common complications for the lactating parent

4

Describe components of a breastfeeding-friendly practice

Lactogenesis

- Glandular development and secretion of colostrum in late pregnancy = Lactogenesis I
 - Breast growth and glandular development
- Transition to mature milk = Lactogenesis II
 - “Comes in” 3-5 days postpartum
 - Increase in quantity and fat/carb content

TABLE 6.1

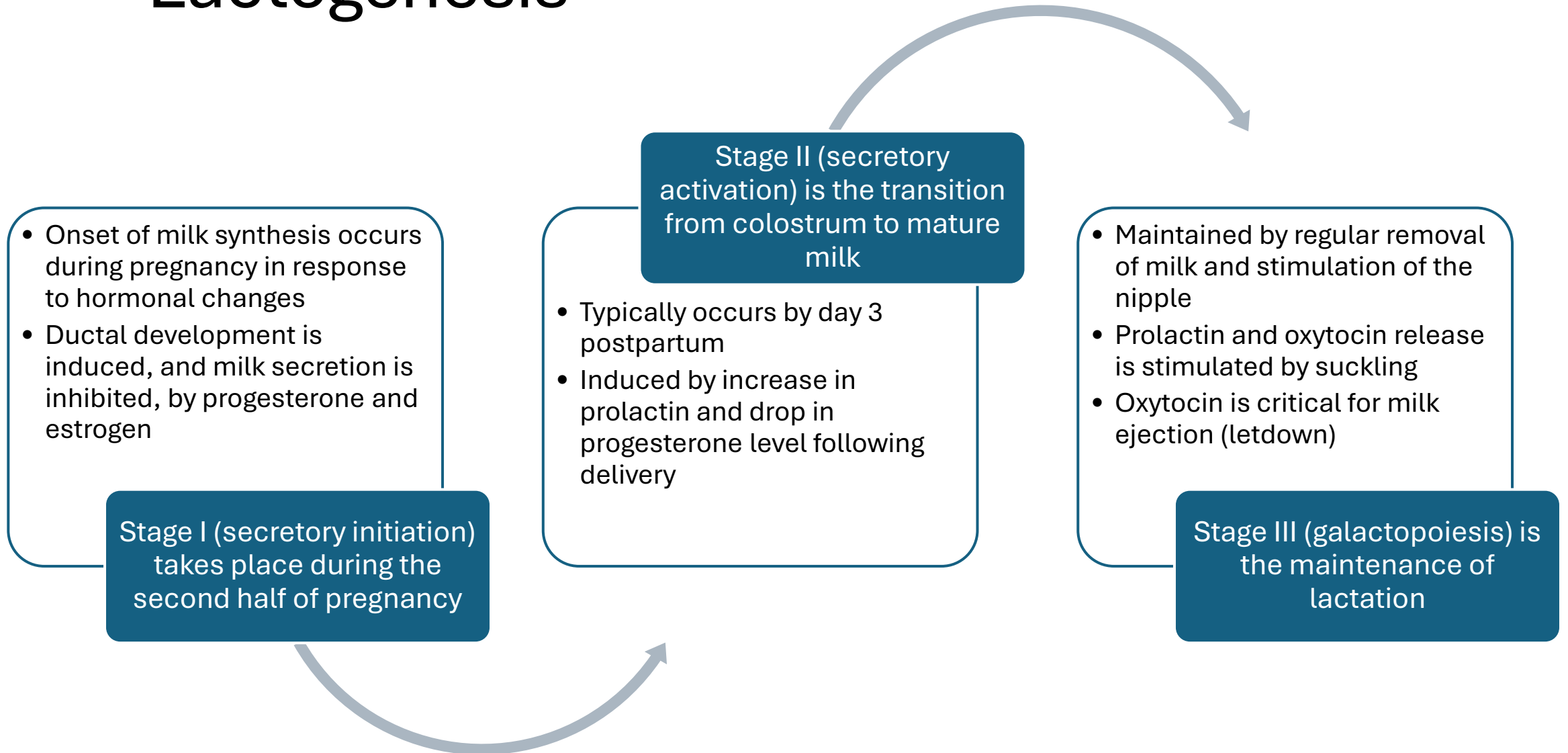
Actions of Hormones in Lactogenesis

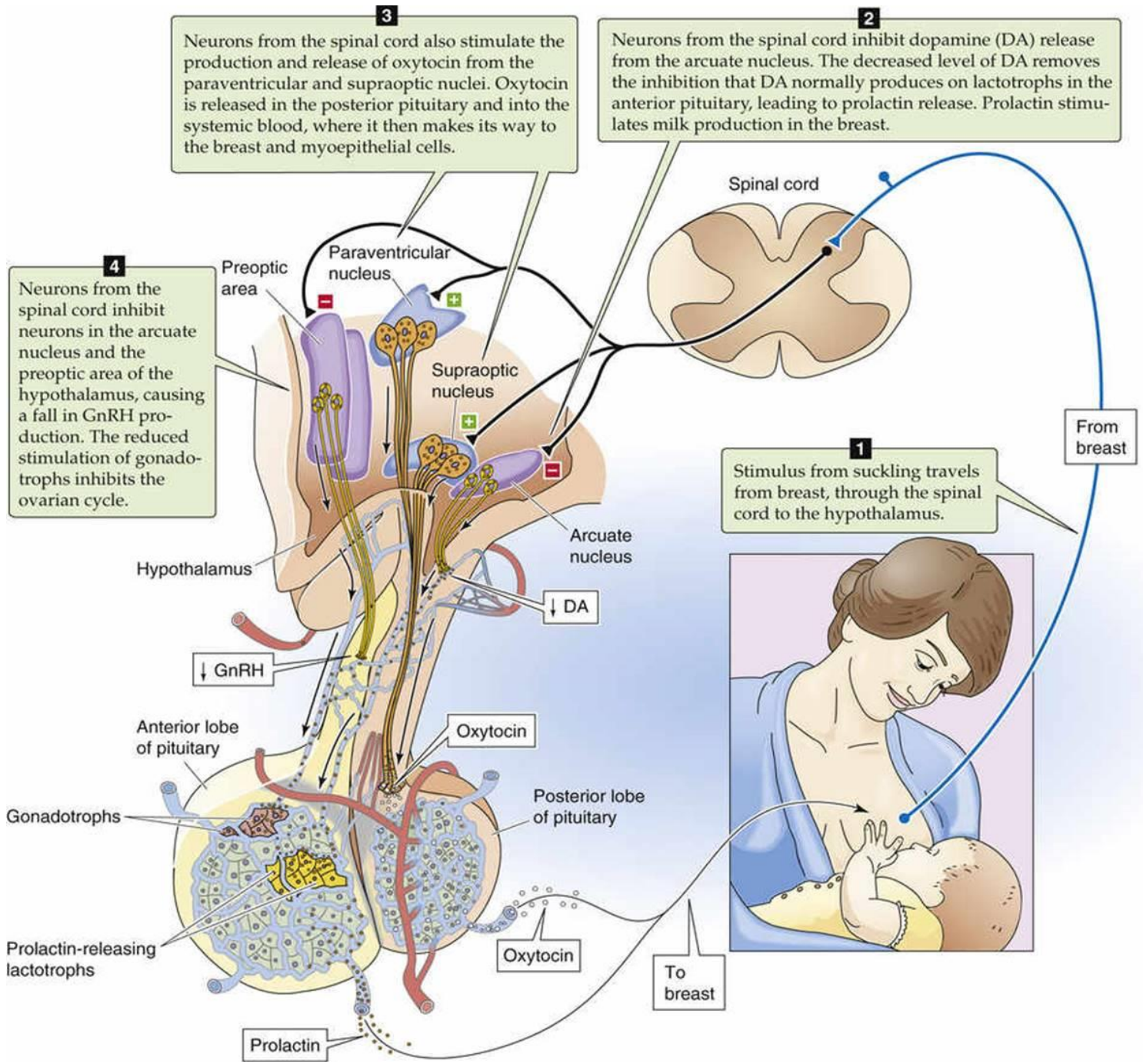
Hormone	Effects in Mammary Gland
Estradiol	Stimulation of ductal development ^a Inhibition of milk secretion ^a Stimulation of PRL gene expression Stimulation of OT gene expression ^a
Progesterone	Stimulation of ductal development ^a Inhibition of milk secretion ^a Stimulation of lactose synthesis ^a Inhibition of OT gene expression ^a
Cortisol	Stimulation of casein gene expression Stimulation of PRL receptor expression
Prolactin	Stimulation of milk proteins gene expression Stimulation of milk lipid synthetic enzymes gene expression Stimulation of progesterin receptor gene expression
Oxytocin	Stimulation of myoepithelial cell contractions

Notes: OT, oxytocin; PRL, prolactin.

^a Effects exerted during pregnancy.

Lactogenesis





- Suckling/nipple stimulation signals hypothalamus → relieves dopamine inhibition of prolactin release
- Prolactin released from anterior pituitary stimulates lactocytes in the breast alveoli to produce milk
- Oxytocin released from posterior pituitary causes myoepithelial cells around the alveoli to contract and release milk

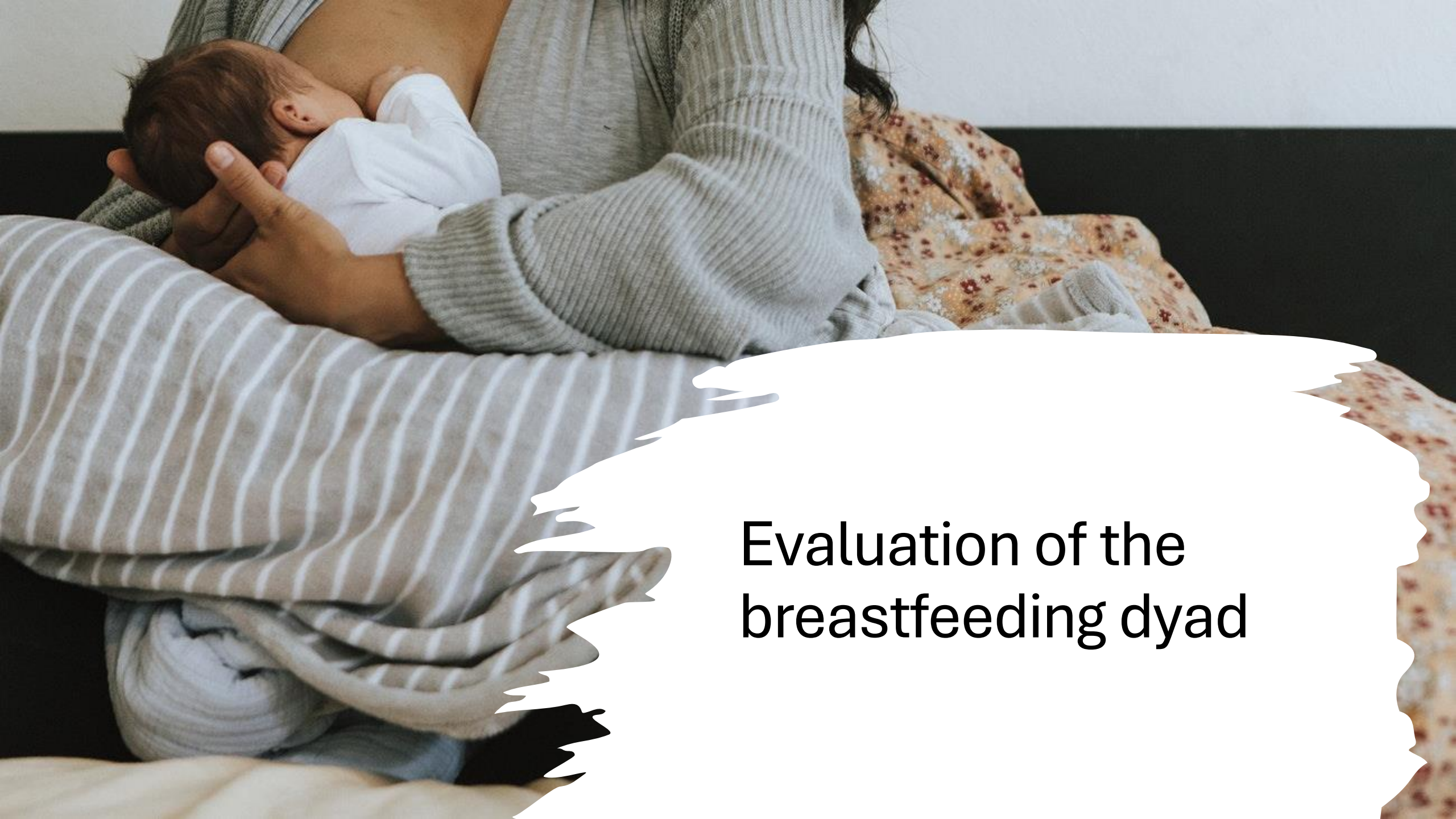
Selected Risk Factors for Lactation Problems

Maternal

- Primiparity
- Intention to breast and bottle/formula feed at less than 6 weeks
- Long induction/augmentation of labor
- Maternal obesity or infertility
- Previous breast surgery
- Medications

Infant

- Low birth weight or prematurity
- Multiples
- Difficulty in latching or ineffective suckling
- Oral abnormalities or medical or neurologic problems
- Excessive weight loss



Evaluation of the breastfeeding dyad

Priorities

- Understand the family's feeding preferences/goals
- Determine if intake is adequate for growth
- Evaluate milk transfer
- Evaluate milk production
- Make a realistic, family-centered plan to feed the baby and protect milk production



History

How often is the baby feeding? How? For how long?

How is the baby's behavior at the breast?

How many wet diapers and stools in 24 hours?

Any changes in breasts since the birth?

Any pain or discomfort with breastfeeding?

Exam

Infant weight + weight loss percentiles (first 30 days)

General appearance

Hydration status

Jaundice

Parent-child interaction

Maternal affect

Maternal breast and nipples

Feeding Observation

Infant positioning

Latch

Sucking/swallowing

The nipple after the feed

Pre- and post-feed weights

Early Volumes

Table 1
Normal breastfeeding patterns, volumes, timing and output in the first week of life—term infant

Day of Life	Number of Feeds in 24 h	Volume per Day (cc/kg/d)	Volume per Feed for 3 kg Baby (mL)	Number Urine Outputs	Number Stools
1	4–5	3–17	2–10	1	1
2	6–10	10–50	5–15	2	2
3	8–12	40–120	15–30	3	3
4	8–12	80–160	30–60	4–6	4–5
5	8–12	120–160	45–60	4–7	4–6
6	8–12	130–160	50–60	5–8	4–8
7	8–12	140–170	55–65	>6	>5

- Lack of knowledge of normal feeding patterns can be detrimental to breastfeeding success
- Many healthy newborns will not have a successful latch in the first 24 hours
- Reassurance should be provided that poor feeding for the first 1-2 days is quite normal and not in itself a reason for supplementation

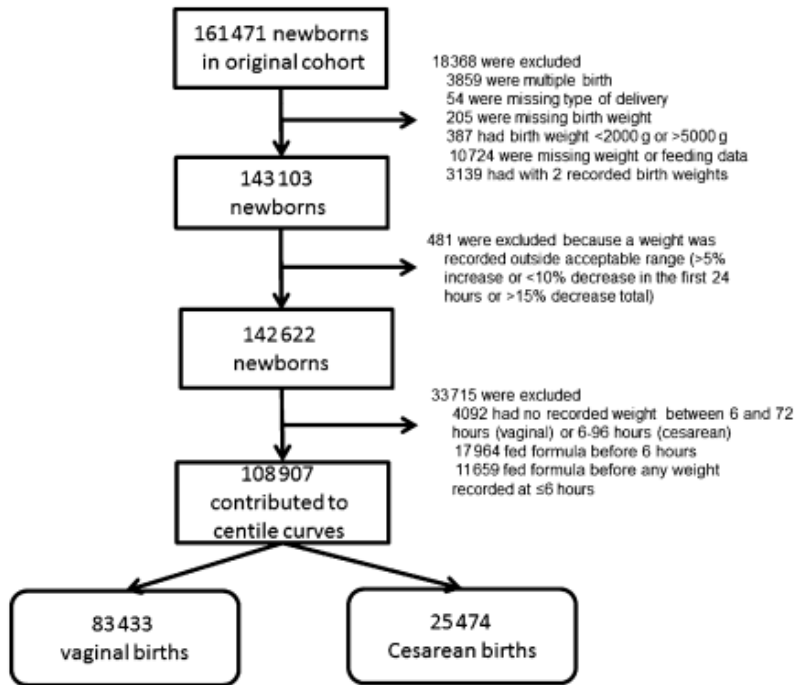


FIGURE 1
Derivation of the final analytic cohort.

Flaherman VJ, Schaefer EW, Kuzniewicz MW, et al. Early weight loss nomograms for exclusively breastfed newborns. Pediatrics 2015;135:e16–e23.

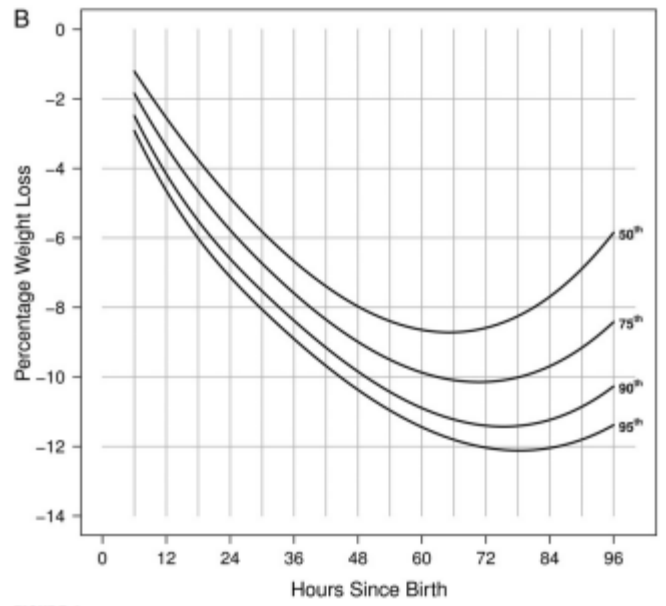
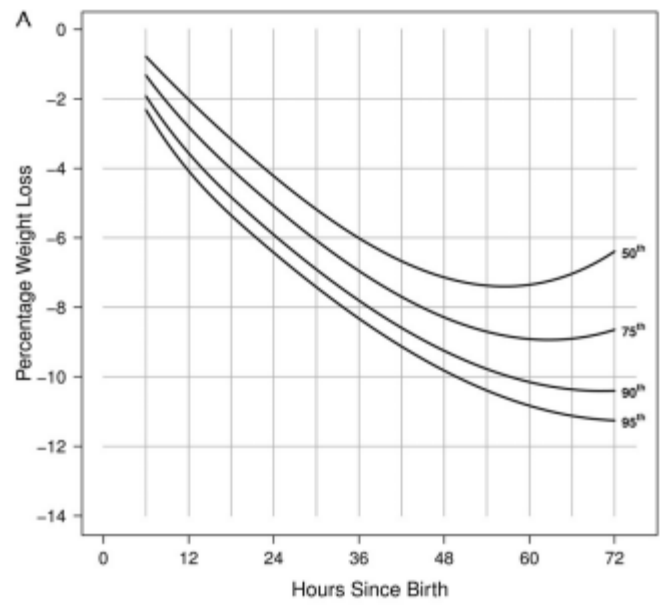


FIGURE 2
A. Estimated percentile curves of percent weight loss by time after birth for vaginal deliveries. B. Estimated percentile curves of percent weight loss by time after birth for Cesarean deliveries.

Weight Loss is Normal

Based on >100k exclusively breastfed newborns

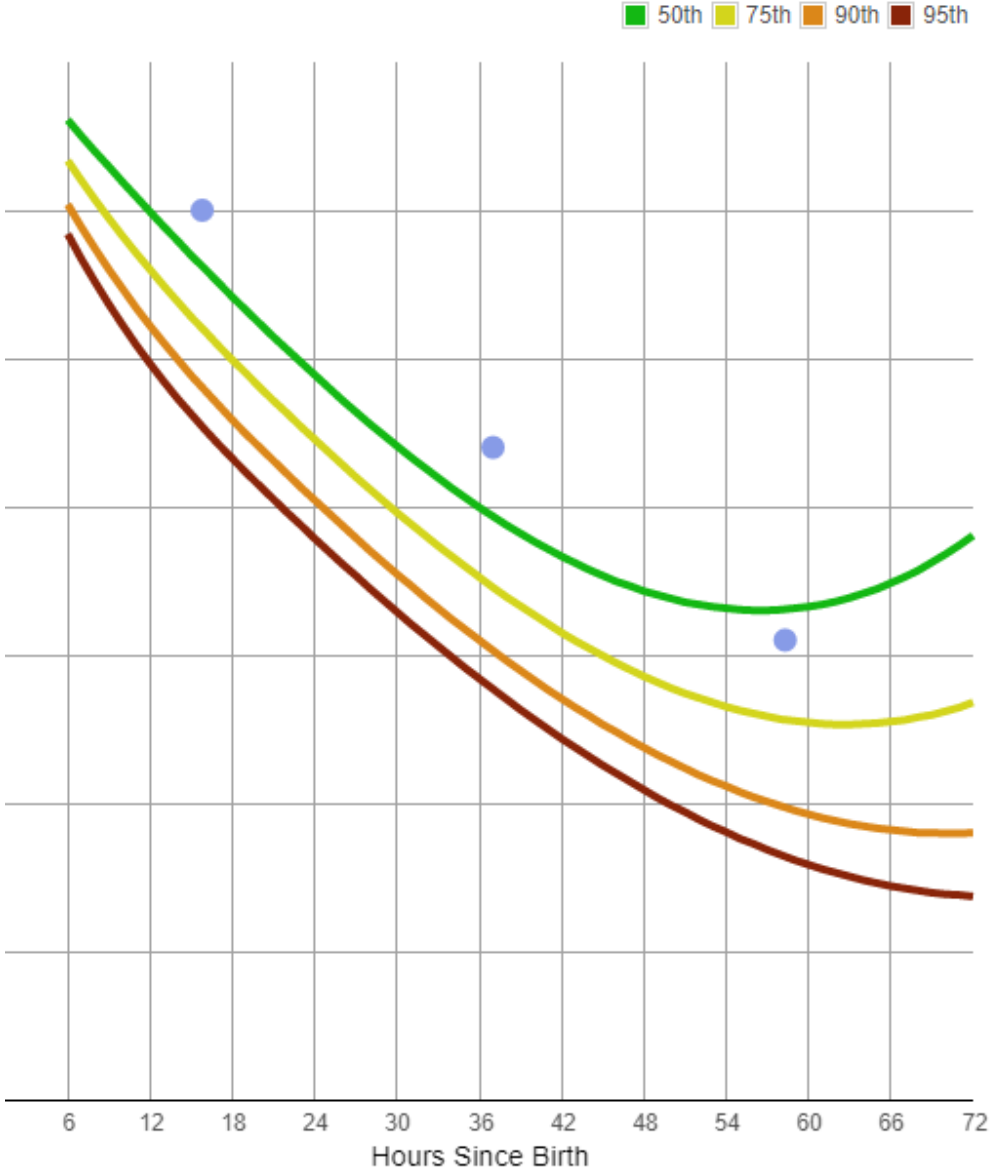
Almost 5% of VD newborns and >10% of CD newborns had lost 10% or greater of their birth weight 48 hours after delivery

By 72 hours, >25% of newborns delivered by cesarean had lost >10% of their birth weight

Weight loss is caused by diuresis and passage of meconium and is a normal part of the transition from intrauterine to extrauterine life

Weight loss is also correlated with intrapartum fluid balance of the mother

Newborn Weight Loss Tool



newt

Birth Details

Weight 3.45 kg	Date Nov 24	Time 02:34
Vaginal	Breast Fed	Edit Details

Measurements

Hour	Weight	Change	Add New	
Birth	3.45 kg	—	Edit	
15.8	3.38 kg	-2%	Edit	x
37	3.27 kg	-5.2%	Edit	x
58.3	3.18 kg	-7.8%	Edit	x

PennState Health

Children's Hospital

<https://www.newbornweight.org>



Mother.ly



Parenting.firstcry.com



milkandmotherhood.com



Lactation Connection

Supplementation Best Practices

DO limit volume to what is physiologically normal or necessary for appropriate growth

DO stimulate milk production with hand expression or pumping

DO allow infant to practice at the breast

Expressed breast milk is preferable and should be used first; next best is donor milk

Feeding options include oral syringes, cups, spoons, or supplemental nursing systems

DO discuss paced bottle feeding

DO think about parents' mental health

DON'T recommend prolonged "triple feeding" (direct feed + expression + supplementation for each feeding episode) without discussion of risks and benefits

DO develop individualized goals with parents

Not enough milk?

- Milk usually “comes in” by day 3 for multiparas and day 5 for nulliparas
- Are there signs of inadequate intake?
 - Jaundice
 - Excessive weight loss >12%
 - Dry, cracked lips
 - Sunken fontanelles
 - Inadequate diaper output
- Is it a transfer problem or supply problem? Or both?
- Think about retained products of conception
- Think about meds, contraception
- Consider CBC, TSH, post-feed prolactin

Caution on “triple feeding”

- Triple feeding is breastfeeding, pumping, then bottle feeding for each feed
- It is exhausting for parents
- Should be used briefly and only as a last resort
- My advice:
 - Make a plan to feed baby appropriate volumes q2-4 hours (combination of breast and bottle if needed)
 - Make plan to empty breasts q2-4 hours
 - Make a plan to keep baby familiar at the breast
 - Lean into family supports



Common Causes of Early Cessation

- Suboptimal colostrum removal in the first few days postpartum
- Nipple pain
- Perceived low milk production (including infant fussiness)
- Medication concerns
- Unsupportive environment

Odom EC, Li R, Scanlon KS, Perrine CG, Grummer-Strawn L. [Reasons for earlier than desired cessation of breastfeeding](#). *Pediatrics*. 2013;131(3):e726–732.

Sriraman NK, Kellams A. Breastfeeding: [What are the barriers? Why women struggle to achieve their goals](#). *J Womens Health (Larchmt)*. 2016;25(7):714–722.

Feltner C, Weber RP, Stuebe A, Grodinsky CA, Orr C, Viswanathan M. [Breastfeeding Programs and Policies, Breastfeeding Uptake, and Maternal Health Outcomes in Developed Countries](#). [PDF-343KB] Agency for Healthcare Research and Quality (US); July 2018.

Engorgement

- Very normal and expected in the first week postpartum even if things going very well
- Facilitate regular milk removal
- Do not recommend pumping solely to relieve engorgement
 - Pumping “to empty” doesn’t work and will upregulate the supply- think about whether this is what you want!
- Mastitis supportive care – rest, anti-inflammatory, ice, Tylenol
 - Antibiotics after 48 hours if no improvement
 - See Academy of Breastfeeding Medicine Protocol #36
<https://www.bfmed.org/assets/ABM%20Protocol%20%2336.pdf>
- Avoid massage
- Avoid heat
- Lymphatic drainage

Lymphatic Drainage

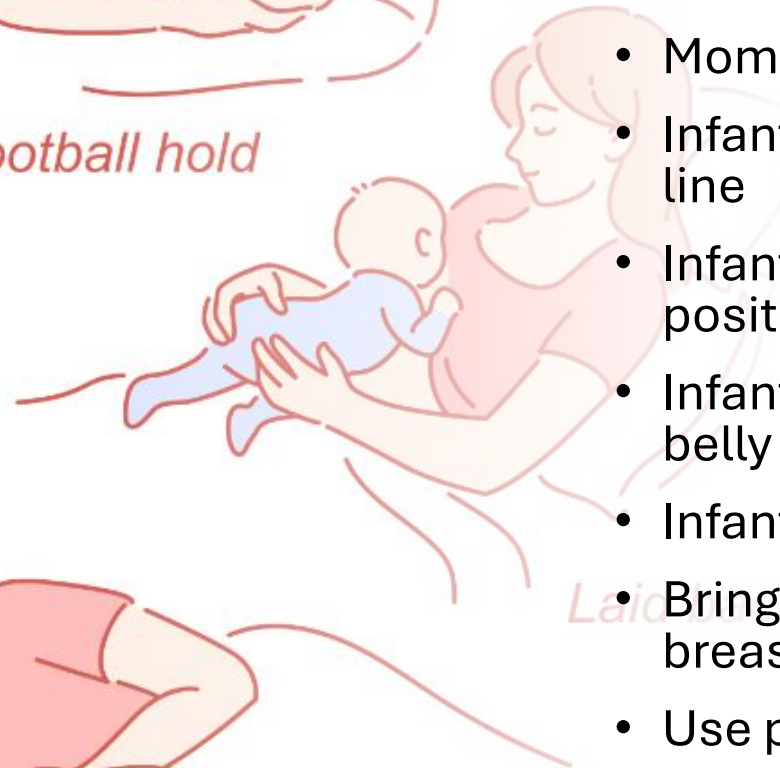


- Reduces swelling by assisting movement of lymph fluid, decreasing edema
- Technique
 - “Very gentle touch/traction of skin - “like petting a cat”
 - The purpose is to lift skin to allow flow of lymphatic drainage and vascular decongestion
 - Ten small circles at junction of internal jugular and subclavian veins
 - Ten small circles in axilla
 - Continue with light touch massage from nipple towards clavicle, axilla
- Start during pregnancy if experiencing painful rapid breast growth, and use as needed postpartum for engorgement

Nipple pain

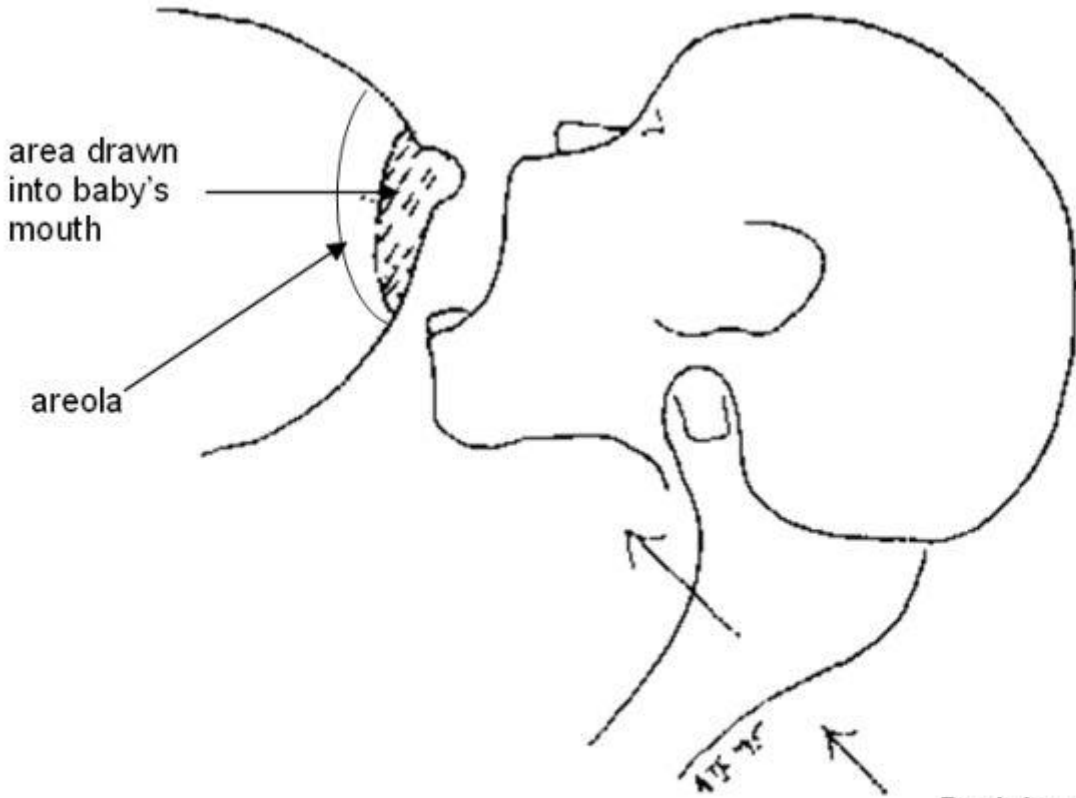
- Optimize latch
- Say no to “triple nipple cream” – use the appropriate, targeted treatment for an appropriate duration
- Think about ankyloglossia when pain is not improved with repositioning and wound care
- See ABM Protocol on Persistent Nipple Pain
<https://abm.memberclicks.net/assets/DOCUMENTS/PROTOCOLS/26-persistent-pain-protocol-english.pdf>

Best Tips for Helping with Latch



- Mom in a comfortable position
- Infant ears, shoulders, hips in a line
- Infant head/neck in neutral position
- Infant belly against mother's belly
- Infant nose to maternal nipple
- Bring baby to breast, not breast to baby
- Use props

A deep, asymmetric latch



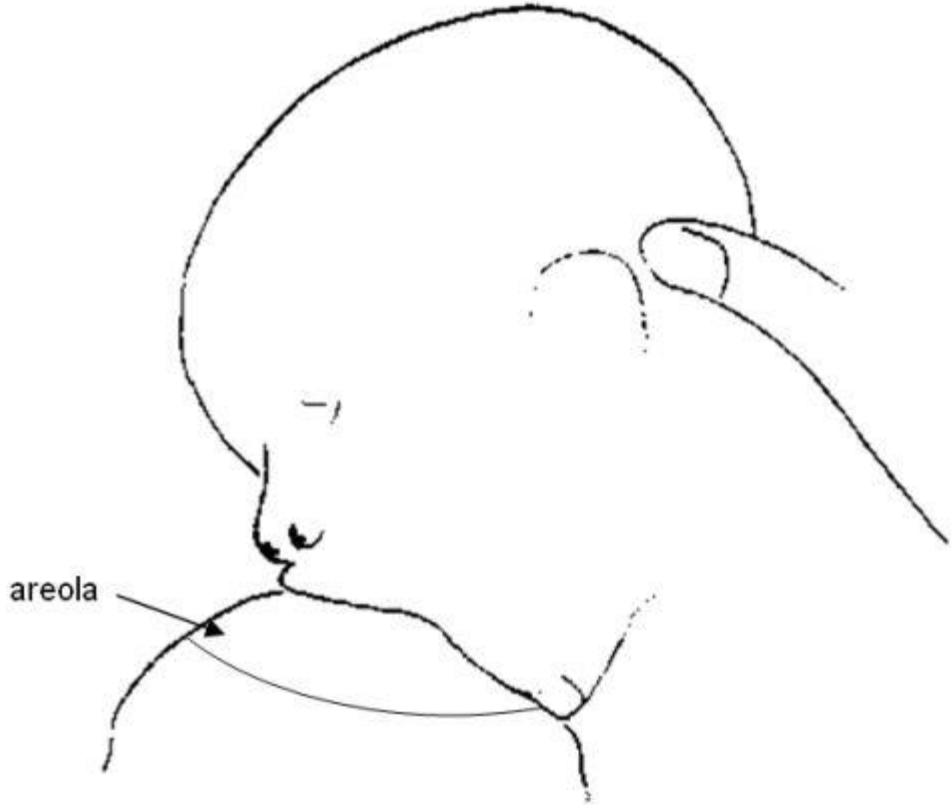
area drawn into baby's mouth

areola

WIDE MOUTH / GAPE

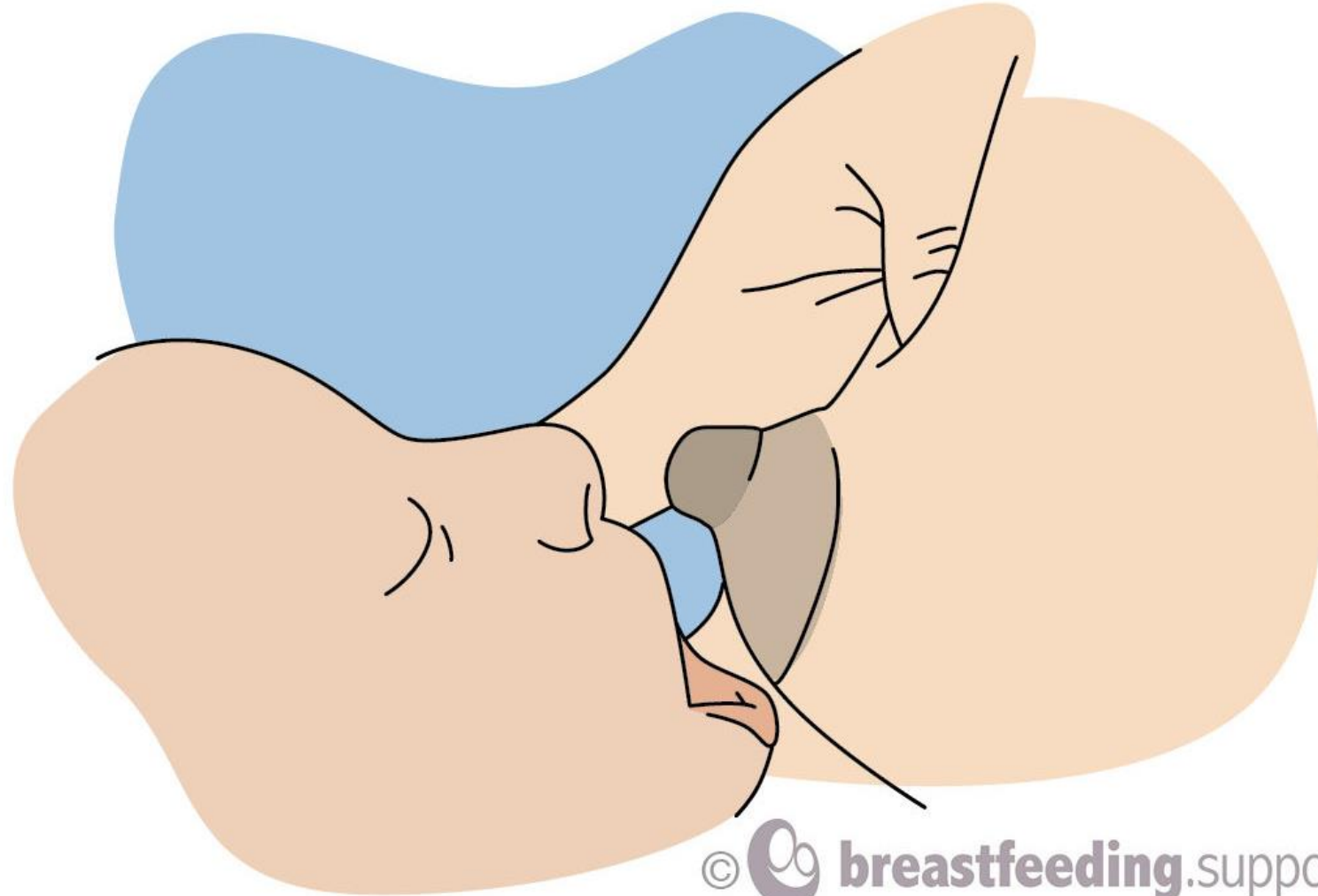
Push base of hand firmly against baby's shoulders keeping baby "uncurled" chin coming in first

MOTHER'S VIEW OF NURSING BABY



areola

Exaggerated latch (“flipple”)



Diagnosis & Management of Early Postpartum Nipple Wounds

- What caused the wound?
 - Trauma from latch, pump, or both?
 - How is milk transfer by baby?
 - Assess & correct shallow/traumatic latch, and check flange size
 - Inquire about any topicals – and know that lanolin, coconut oil, and petrolatum can be allergenic
- Be aware of impact of multi-trauma
 - Shallow latch and/or pump trauma → Vasospasm → Pain → Topicals → Irritant/Allergic Dermatitis



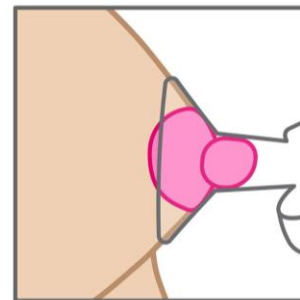
For wet, exudative wounds



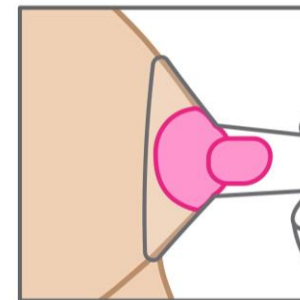
For dry wounds—use with a hypoallergenic balm

Pump flange fit

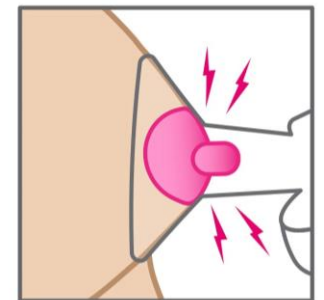
- The “flange” is the cone-shaped plastic piece that goes over the breast while pumping
 - The nipple moves in/out of the tunnel but should not rub on the sides
 - The areola is NOT elastic and should not enter the flange
 - If it does, it can cause areola edema, skin breakdown, and pain
- “Sizing Guide” by the major pump manufacturers can be found online
 - Measuring is an option
 - Trial and error is probably best



Too Small



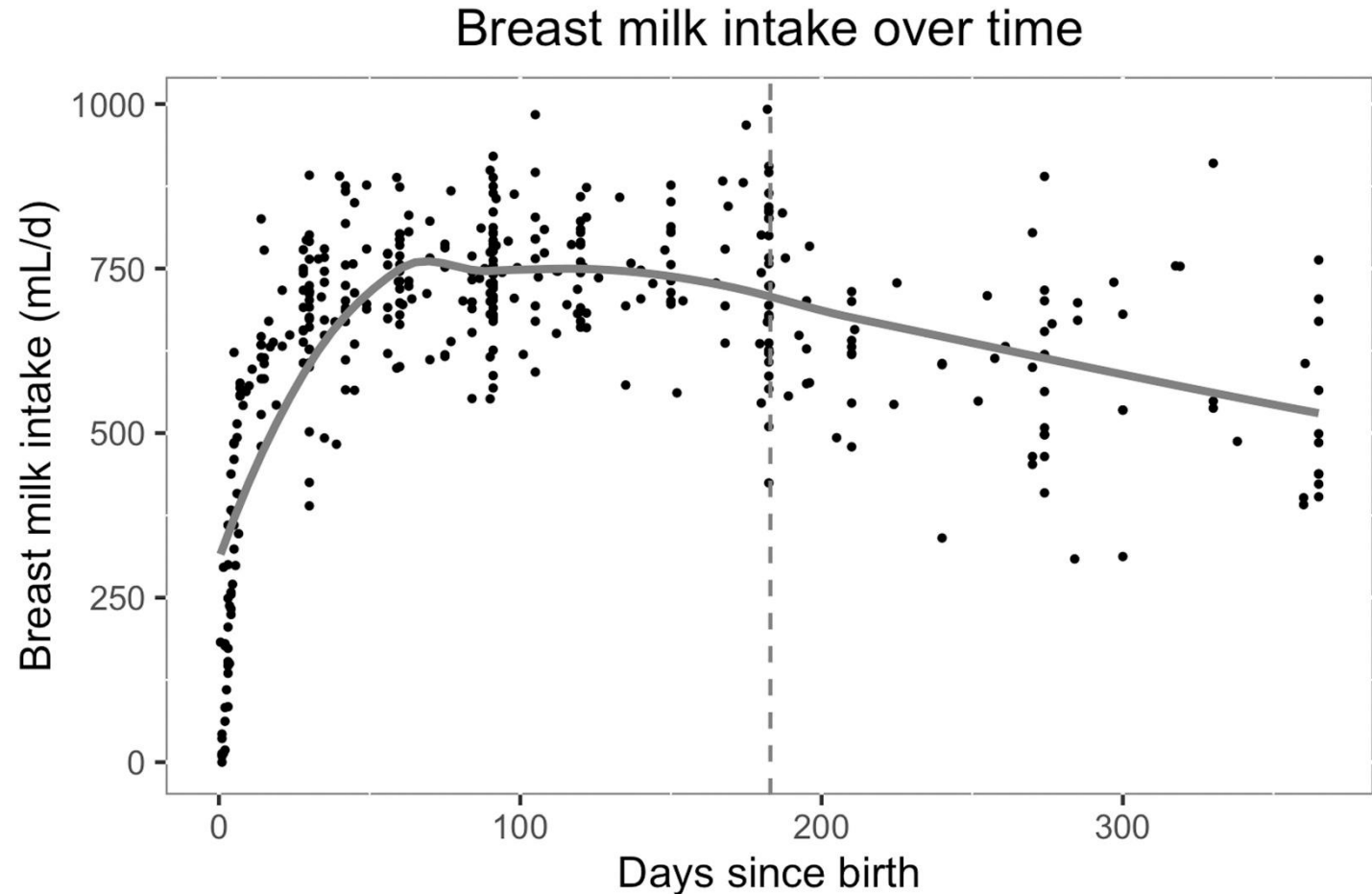
Correct Fit



Too Large

Later Volumes

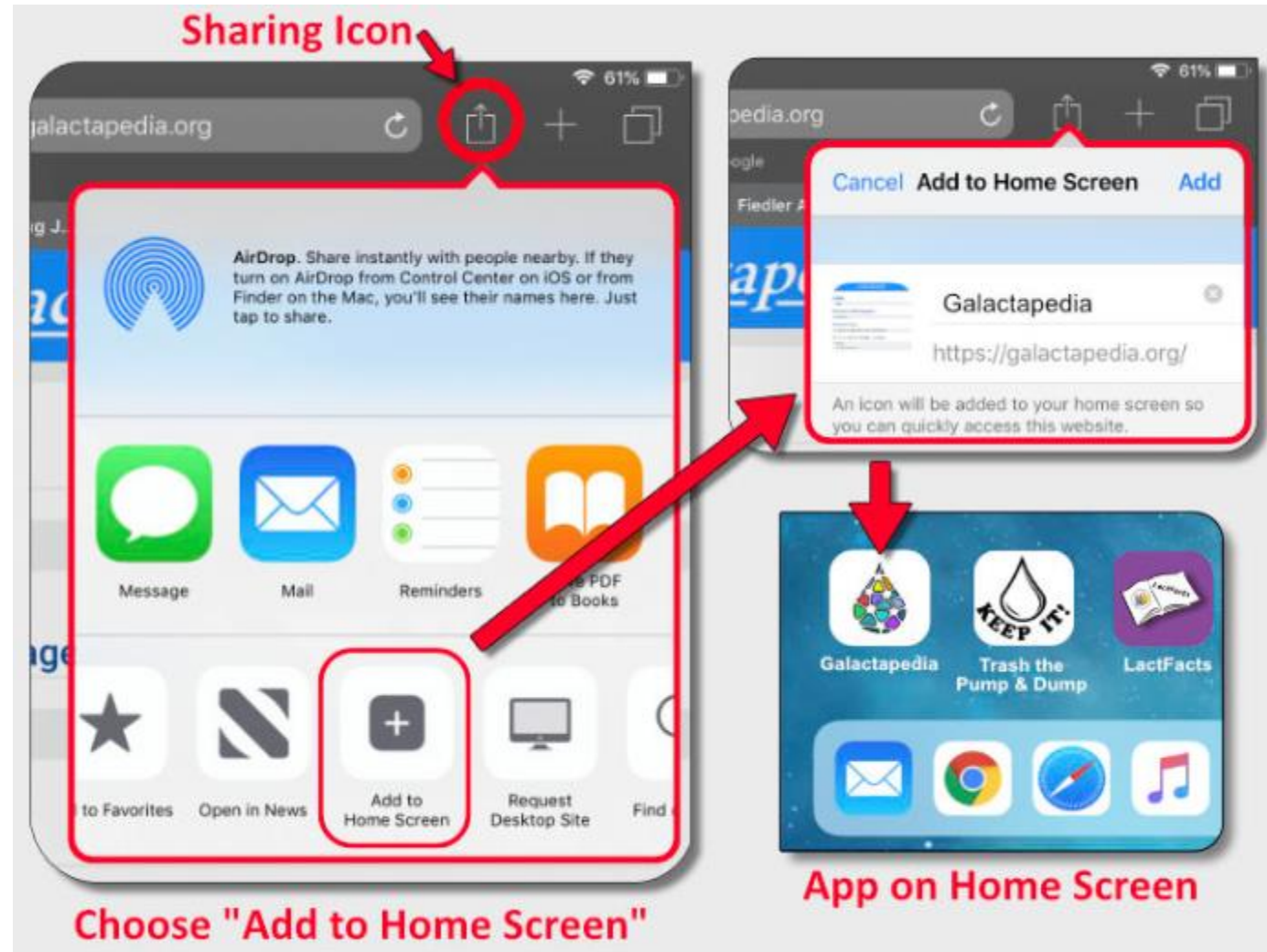
- A term, well baby between 1 and 6 months old requires 24-30 oz/day (1-1.25 oz per hour)
- Milk volumes decrease slightly from 6 to 9 months, more significantly (to about 16-20 oz/day) between 9 and 12 months



Rios-Leyvraz, M., & Yao, Q. (2023). The Volume of Breast Milk Intake in Infants and Young Children: A Systematic Review and Meta-Analysis. *Breastfeeding medicine : the official journal of the Academy of Breastfeeding Medicine*, 18(3), 188–197. <https://doi.org/10.1089/bfm.2022.0281>

Trash the Pump & Dump

- If you are uncertain, please advise **PUMPING AND SAVING!** Dumping milk is usually **NOT** necessary, and the expressed milk can be given to the child later.
- Use your resources and give reasoned, thoughtful advice



Pearls

- Meds to avoid
 - Harmful to baby
 - Antineoplastics
 - Radioactive iodine
 - Codeine
 - Tessalon Perles
 - Illicit drugs
 - Harmful to milk supply
 - Dopamine agonists/prolactin antagonists
 - Estrogen
 - Sudafed
- Usual radiographic studies are not contraindicated

Anesthesia & Breastfeeding: More Often Than Not, They Are Compatible

In this issue, Lee *et al.*² randomized laboring patients to different concentrations of epidural fentanyl. There was no difference in successful breastfeeding outcomes at 6 weeks.

Breastfeeding is important to infant health. Receiving anesthesia should not affect mom's ability to breastfeed, or the safety of her breastmilk.¹⁻⁴

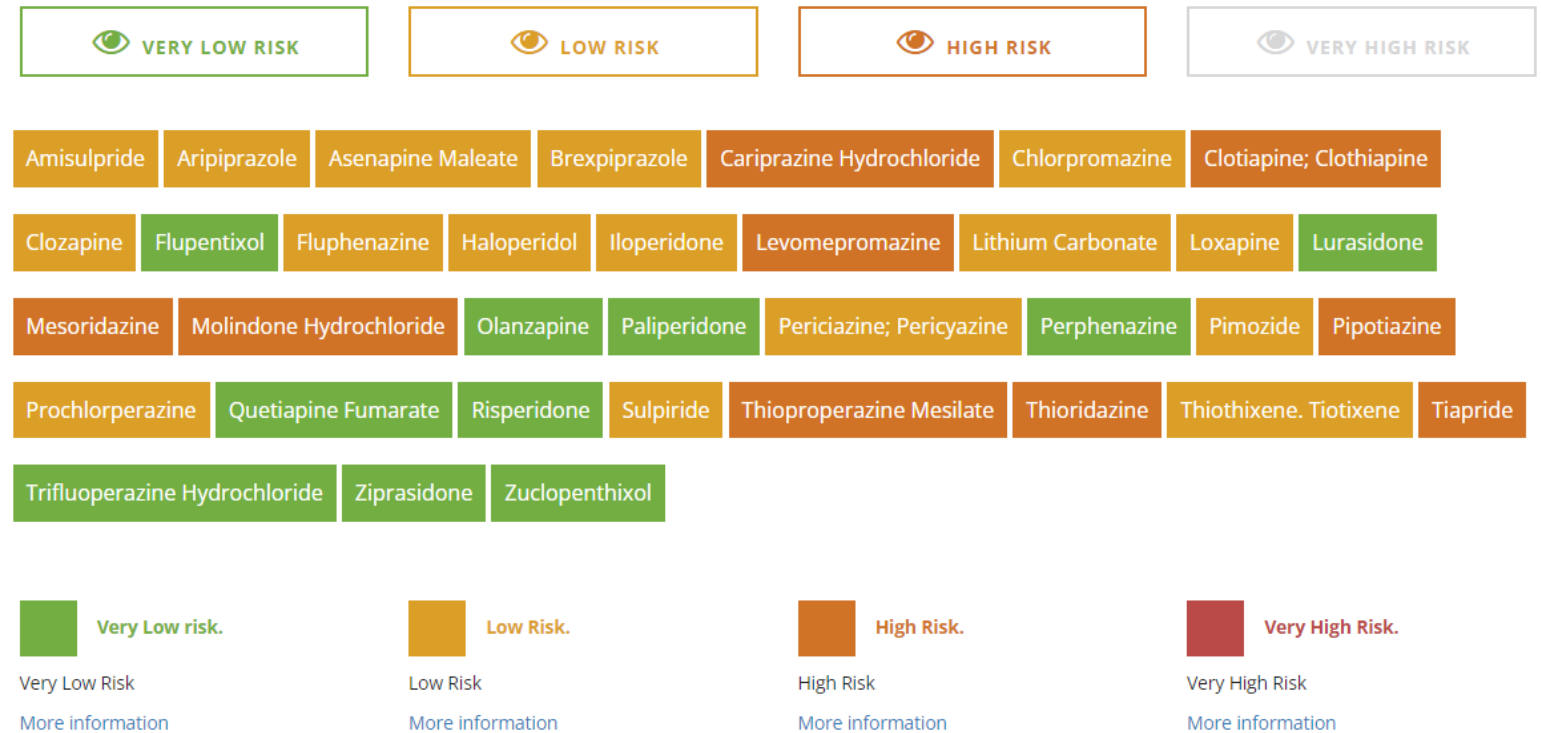
Drug Class	Drug	Compatibility
Benzodiazepines	Midazolam	PROCEED
	Fentanyl (single dose IV)	PROCEED
Hypnotics	Morphine	Monitor closely
	Hydromorphone	Monitor closely
Opioids	Meperidine	AVOID
	Propofol	PROCEED
Paralytics	Succinylcholine	PROCEED
	NMBAs	PROCEED
Reversal	Neostigmine / glycopyrrolate	PROCEED
	Etomidate	PROCEED
Antiemetics	Ketamine	No Data
	Volatile anesthetics	PROCEED
Local anesthetics	Lidocaine	PROCEED
	Bupivacaine	PROCEED
Local anesthetics	Ondansetron	PROCEED
	Dexamethasone	PROCEED
	Metoclopramide	PROCEED

"A general principal is that a mother can resume breastfeeding once she is awake, stable, and alert after anesthesia has been given."²

Med Compatibility Resources

- LactMed
- Hale's/Infant Risk
 - Web & App
 - Call (806) 352-2519
- <https://www.e-lactancia.org/>
 - Nice topical overviews with comparisons
- Trash the Pump & Dump
 - <https://trashthepumpanddump.org/>

ATC N05A: Antipsychotics



Creating a Breastfeeding-Friendly Office

A breastfeeding friendly practice is “a physician’s practice that enthusiastically promotes and supports breastfeeding through the combination of a conducive office environment and education of healthcare professionals, office staff, and families.”

–Academy of Breastfeeding Medicine Protocol #14

Components of Care

- Provide ongoing support
- Avoid creating barriers
- Normalize exclusive breastfeeding to 6 months, and ongoing breastfeeding to 2 years or more
- Don't accept or give away free formula
- Do ask how feeding is going
- Offer referral when needed
- Understand that breastfeeding trauma/grief can occur



Helpful Resources

- Academy of Breastfeeding Medicine (ABM) bfmed.org
 - Free, open-source protocols on many topics
- Institute for the Advancement of Breastfeeding and Lactation Education (IABLE) lacted.org
- Physician Guide to Breastfeeding <https://physicianguidetobreastfeeding.org/>
 - Physician and patient-oriented resources
- FirstDroplets.com



Questions?

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