Trash the “Pump and Dump”: Common Pitfalls in the Care of Lactating Patients

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Disclosures

I have no relevant disclosures for this presentation. A word of thanks to the many physician members of the Facebook group “Dr. MILK” whose freely shared lactation photos enliven this presentation.

About Me…

- Family physician with OB fellowship training
- Mom of 2 (soon to be 3!) with breastfeeding and pumping experience
- Strongly interested in supporting breastfeeding dyads

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Learning Objectives

1. Identify medications and procedures that require changes to a patient's breastfeeding plan
2. Recognize common medications, procedures, and imaging that are compatible with lactation
3. Understand interventions that can impact breast milk supply

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Agenda

1. **Breastfeeding 101**

1. **Breastfeeding and Medical Interventions**

2. **Contraindications**

1. **Breastfeeding Support Resources**

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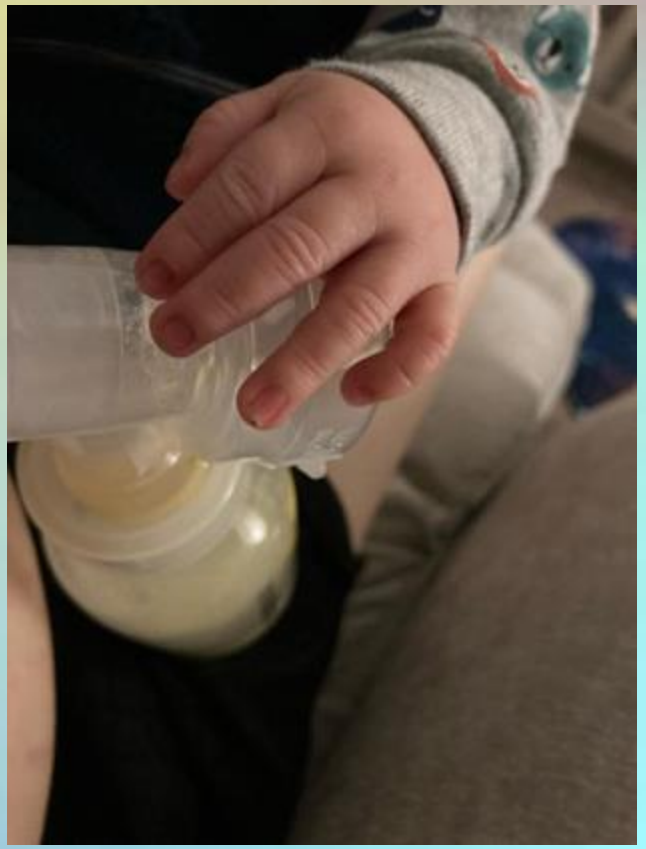
Terminology

Breastfeeding and chest-feeding

Lactating patient - “mother,” “woman”

Lactation also includes pumping!

- Exclusive pumping - all baby’s milk is pumped breastmilk fed via bottle
- Inclusive pumping - some of baby’s milk is pumped breastmilk, with some supplement



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Breastfeeding 101

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“But I don’t work with lactating patients or babies!” … ***Yes, you probably do!***

- **95%** of Washington State’s babies start their lives with (at least some) breastfeeding
- Over half of lactating parents (**54%**) are breastfeeding at 6 months postpartum

Your spouse, family members, colleagues, and friends may also benefit from this knowledge!

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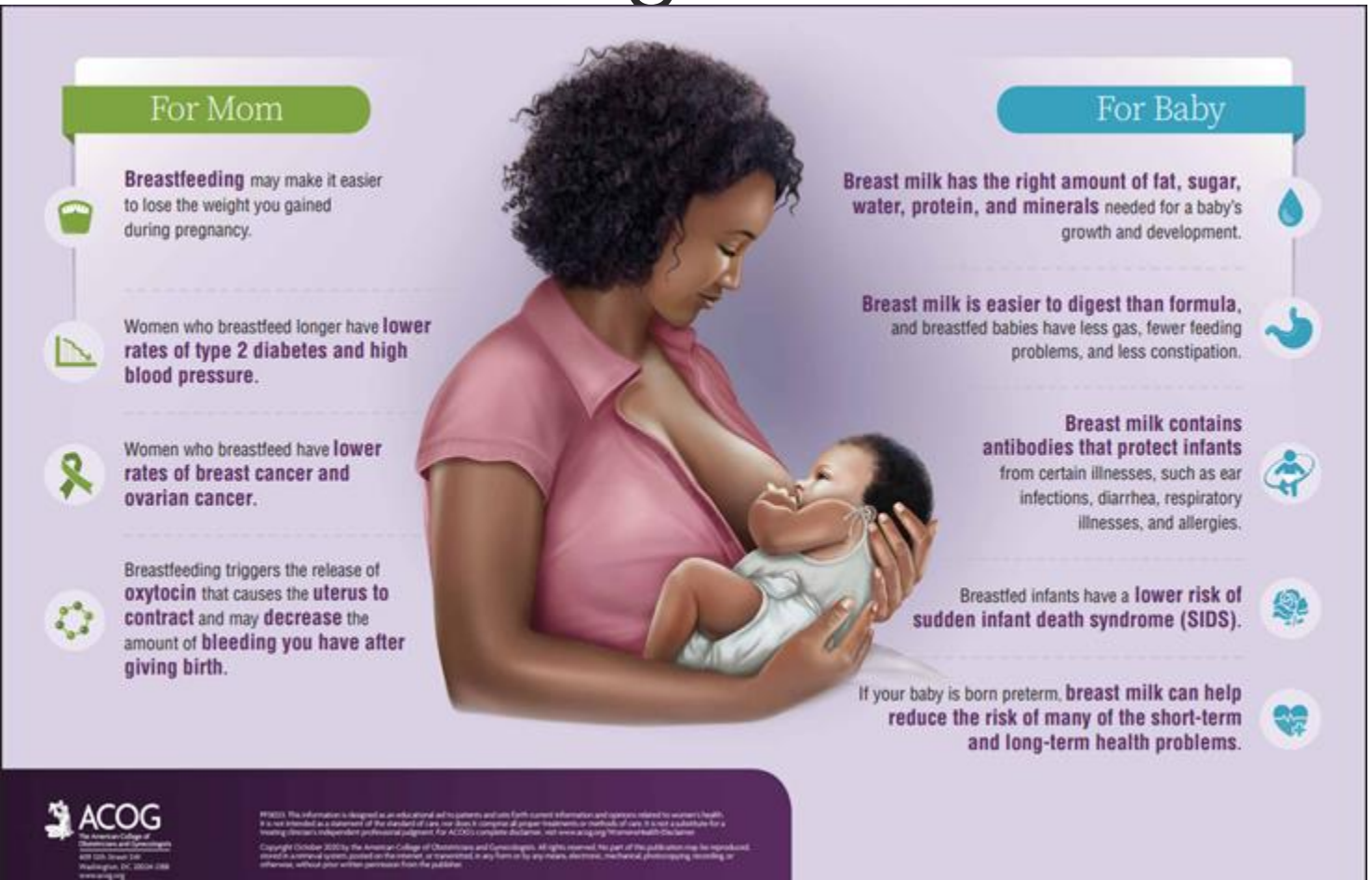
Breastfeeding Benefits



Specific benefits: preterm infants

Mother's own milk for infants <34 weeks:

- Improved neurodevelopment
- Improved growth
- Decreased risk of NEC
- Decreased risk of late-onset sepsis
- Decreased retinopathy of prematurity

Preterm milk is also higher in protein and bioactive molecules than term milk

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Duration of breastfeeding

WHO and AAP Recommendations:

- Start breastfeeding in the 1st hour of life
- Exclusive breastfeeding for 6 months
- Continue for 2 years or beyond

2-year recommendation is new (2022), with primary rationale being significant maternal risk reduction for T2DM, HTN, CAD, and breast and ovarian Ca in mothers who breastfeed >12 months.

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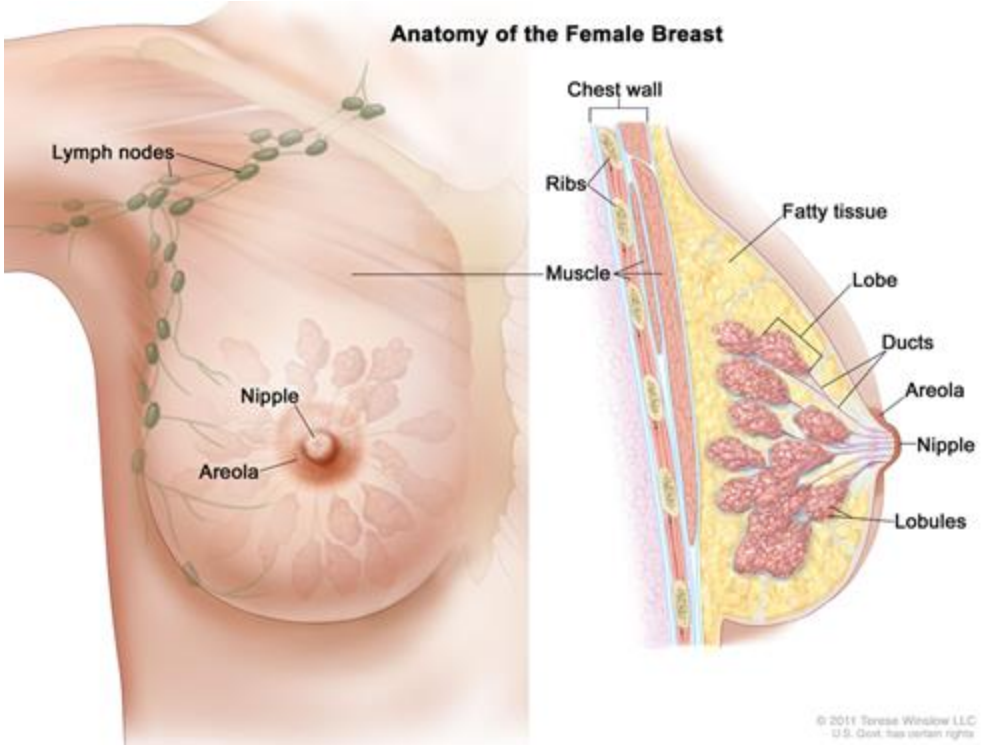
Breastmilk Physiology



Supply and Demand

- Milk removal and nipple stimulation -> milk production
- Initially, need 8-12 milk removals per 24 hours
    - Most common initial cause of low supply - insufficient or ineffective nursing/pumping

Hormonal Mediation

- Prolactin (milk production)
- Oxytocin (milk letdown)

Maternal Status

- Hydration, caloric intake, sleep, and medical illness/ stress can all also impact milk supply

NCI "Mammary Gland" https://www.cancer.gov/publications/dictionaries/cancer-terms/def/mammary-gland

Lactation is hard work!

- 500 extra kcal/day required
- 8-12 sessions per 24 hours at first, each lasts 20-60 minutes for newborns
- Pumping: every 2-4 hours, lasting 20-30 minutes plus washing and drying all the parts, plus bottles and nipples…

Don’t waste that effort and time - avoid the “Pump and Dump” unless truly indicated!

Breastfeeding and Medical Interventions

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Safety of Breastfeeding and…

Imaging – general diagnostic

✅ Recommended

- X-ray, including chest X-ray
- Ultrasound
- CT
  - Including IV or enteral contrast
- MRI
  - Including IV gadolinium-based contrast
- PET-CT
- Bone scan

❌ NOT Recommended

- Thyroid imaging: I-131 +/- I-123

Pause feeds temporarily

- Technetium studies (next slide) - e.g. cardiac, renal, V/Q scan

Safety of Breastfeeding and…

Imaging – general diagnostic

Table 1. Common Nuclear Medicine Imaging Agents and Recommendations for Breastfeeding

Imaging agent	*Breastfeeding interruption*
Noncontrast radiographs	No
Nonvascular administration of iodinated contrast	No
CT with iodinated intravenous contrast	No
MRI with gadolinium-based intravenous contrast	No
Nuclear medicine imaging	
PET	No
Bone scan	No
Thyroid imaging	
I-131	Cessation for this infant
I-123	Recommendations vary, up to 3 weeks
Technetium-99m pertechnetate	Up to 24 hours, depending on dose
Renal imaging	
Tc-99m DTPA	No[a]
Tc-99m MAG3	No[a]
Tc-99m DMSA	No[a]
Tc-99m glucoheptonate	No[a]
Cardiac imaging	
Tc-99m Sestamibi	No[a]
Tc-99m Tetrofosmin	No[a]
MUGA	
Tc-99m RBCs in vitro	No[a]
Tc-99m RBCs in vivo	Up to 12 hours, depending on dose
VQ scan	
Tc-99m MAA	12 hours
Breast imaging	
Screening or diagnostic mammography	No
Ultrasound	No
MRI with gadolinium-based intravenous contrast	No

[a]The International Atomic Energy Administration recommends withholding breastfeeding for 4 hours or one feeding to account for any external radiation and free Tc99m pertechnetate in the product.

CT, computed tomography; MRI, magnetic resonance imaging; MUGA, multigated acquisition scan; Tc-99m MAA, technetium-99m macroaggregated albumin; PET, positron emission tomography; Tc-99m MAG3, technetium-99m mertiatide; Tc-99m DMSA, technetium-99m succimer; VQ, ventilation-perfusion.

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Safety of Breastfeeding and...

Breast Imaging

American College of Radiology
ACR Appropriateness Criteria®
Breast Imaging of Lactating Women

Variant 1: **Breast cancer screening during lactation. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
Digital breast tomosynthesis screening	Usually Appropriate	☢☢
Mammography screening	Usually Appropriate	☢☢
US breast	May Be Appropriate	O
MRI breast without and with IV contrast	Usually Not Appropriate	O
MRI breast without IV contrast	Usually Not Appropriate	O
Sestamibi MBI	Usually Not Appropriate	☢☢☢

Safety of Breastfeeding and…

General Medications

Safe:

- Most antibiotics
- Topical anesthetics
- Many antihypertensives
- Diabetes medications
- OTC analgesics
- Most prescription analgesics
- Inhalers
- Most antidepressants
- And many more…

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Not Recommended:

- Cytotoxic medications
- Long-term (>21 days) doxycycline
- Ergotamine
- Lithium
- Phenobarbital
- High-dose steroids

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With Caution:

- Antipsychotics
- Some SSRIs
- Stimulants
- Sedatives
- High-dose opioids (>45 MME/day)
- Bupropion
- Warfarin
- MANY others…

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InfantRisk App

CEPHALEXIN

Trade Names: Keflex, Ceporex, Ibilex

Overall Rating: L2 - Limited Data-Probably Compatible

1st	2nd	3rd	BIRTH	0-6	6-12	12+
Trimester				Months		

Pregnancy Overview

Human studies are either unavailable or have failed to show that the use of this drug by pregnant women is harmful to the fetus. One study used cephalexin for the treatment of pelvic inflammatory dise...View More

Lactation Overview

Experience with the use of this drug by a large number of breastfeeding mothers has not demonstrated any adverse effects in the infant. Observe for diarrhea.View More

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LactMed Google search

Drugs and Lactation Database (LactMed®) [Internet]. < Prev Next >

Show details

Contents

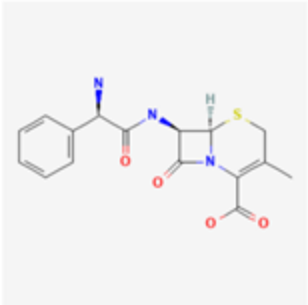
Search this book

Cephalexin

Last Revision: November 15, 2024.

Estimated reading time: 3 minutes

CASRN: 15686-71-2



Drug Levels and Effects

Go to:

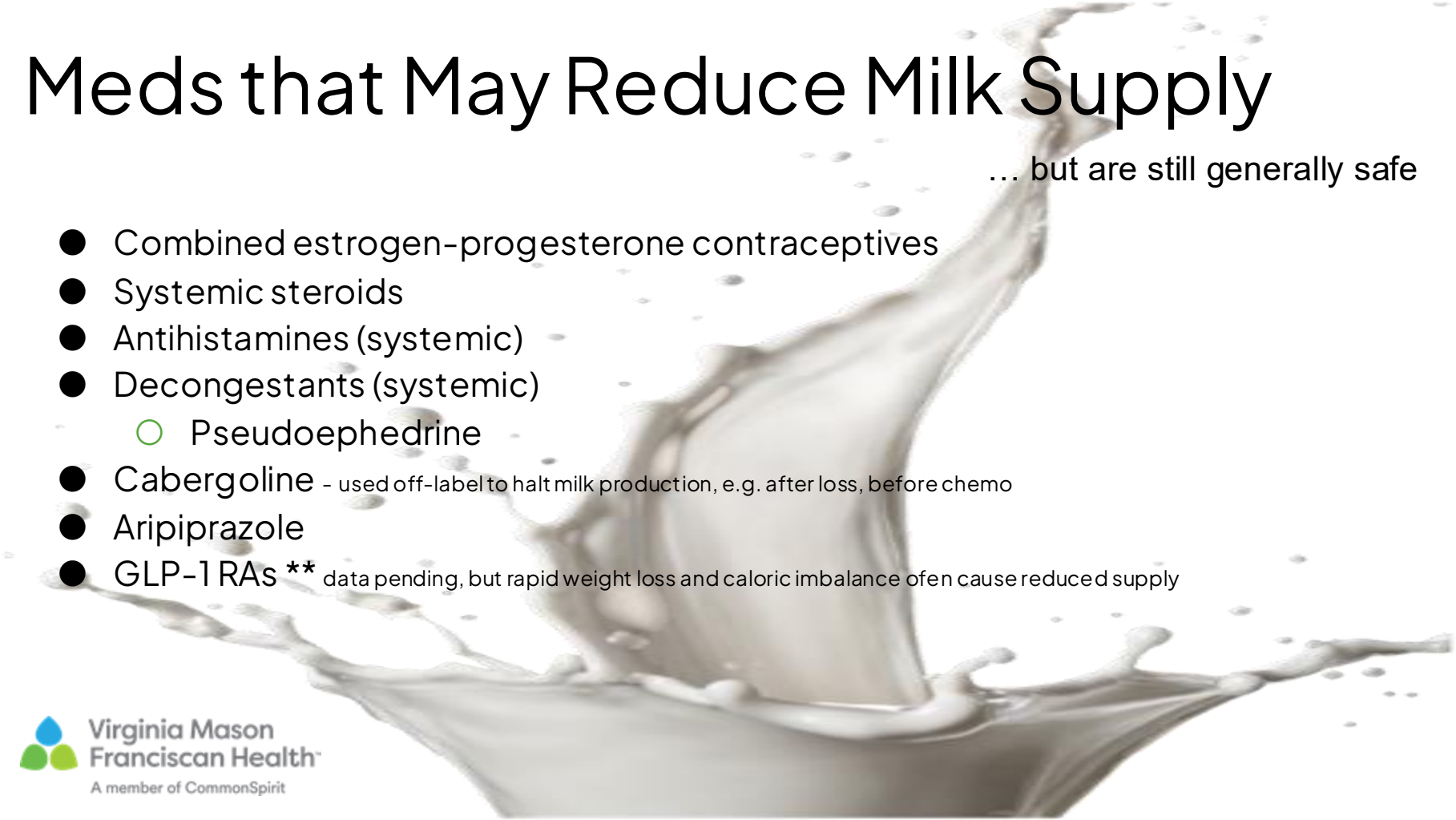
Summary of Use during Lactation

Limited information indicates that maternal cephalexin produces low levels in milk that are usually not expected to cause adverse effects in breastfed infants. Cephalexin is an alternative for the treatment of mastitis.[1,2] Occasionally disruption of the infant's gastrointestinal flora, resulting in diarrhea or thrush have been reported with cephalosporins, but these effects have not been adequately evaluated. A rare case of a severe allergic reaction occurred in an infant previously exposed to intravenous cefazolin whose mother began taking cephalexin while breastfeeding. Cephalexin is acceptable in nursing mothers.

Meds that May Reduce Milk Supply

… but are still generally safe

- Combined estrogen-progesterone contraceptives
- Systemic steroids
- Antihistamines (systemic)
- Decongestants (systemic)
  - Pseudoephedrine
- Cabergoline - used off-label to halt milk production, e.g. after loss, before chemo
- Aripiprazole
- GLP-1 RAs ** data pending, but rapid weight loss and caloric imbalance ofen cause reduced supply



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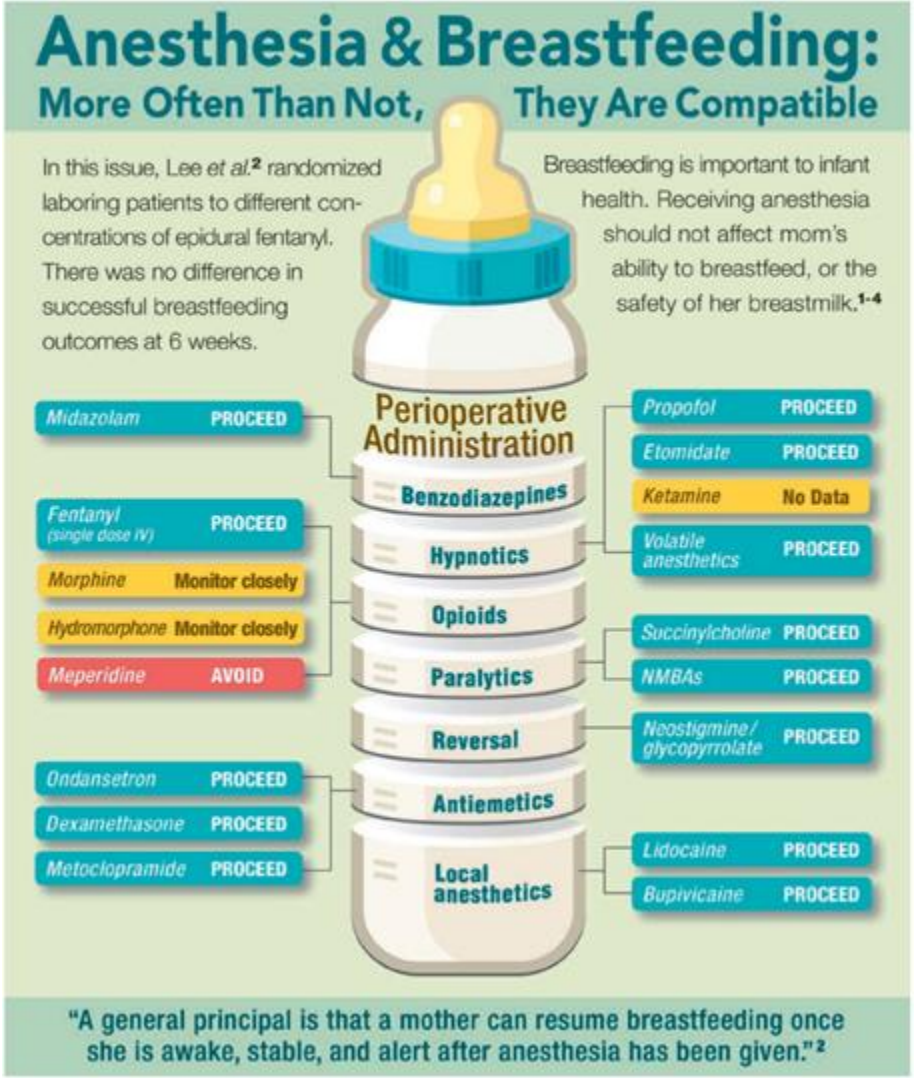
Safety of Breastfeeding and…

Anesthesia

Additional meds to avoid:

- Codeine - metabolites problematic in milk
- Tramadol - metabolites problematic in breastmilk



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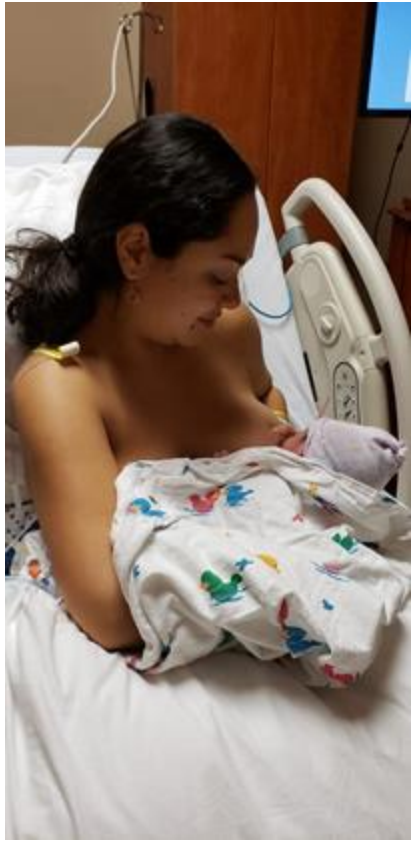
Safety of Breastfeeding and…

Perioperative Care



Nursing/pumping in pre-op?

- Patients require breast emptying every 3-4 hours
- Pump or direct feed if infant is present
- If case time is long (3h or longer), empty breasts right before case start **and** at least every 4 hours during case

When to resume pumping/nursing in PACU?

- As soon as mother is awake and alert enough to feed or pump
- May need to bring pump if PACU policy doesn't allow infant to be present

Breastfeeding and…

Critical Care

Critically ill postpartum patients should…

- Receive breast pumping q3-4 hours if lactation is in their plan
- Receive usual care for sedation, intubation, infection control, pressor support
- Be examined for mastitis, especially if a delay in breast emptying has occurred

In one study,

- **85%** of critically ill postpartum patients initiated lactation
- 70% continued to hospital discharge
- Barriers: timely lactation consultant support, lack of documented breastfeeding plan

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When Not to Recommend Breastfeeding

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Infection considerations

Viral and Bloodborne Pathogens

✅ Hepatitis B (if nipples not bleeding)
✅ Hepatitis C (if nipples not bleeding)
❌ HIV (in the US - may still consider in countries with unsafe water for formula mixing)
❌ Ebola
+/-: CMV (avoid milk if infant is <30 weeks and CMV neg)

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Infection considerations

Separate from infant, but ok to feed pumped milk:

- Untreated active TB
- Active maternal varicella infection (if infant <12mo and not yet vaccinated)
- Active HSV on breast - don’t nurse on that side, cover lesions when holding baby

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Infection considerations

Feed on!

- Mastitis
- URI, COVID, influenza (wear mask to reduce spread)
- Sepsis/bacteremia
- Other maternal infections

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Maternal substance use

- Active illicit substance use : Current guidelines do not recommend breastfeeding
  - Oversedation of parent
  - Unpredictable, high doses of drugs to baby
  - No guidance on patients receiving MAT or in early remission from SUD
- Marijuana
  - Legal differences among states
  - Early studies: impaired neurodevelopment
  - No difference in short-term outcomes including preemies <34wks
  - Majority of harm may be from placental exposure

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Smoking and alcohol use

Tobacco Use

- Increased risk of metabolic syndrome in offspring
- Increased SIDS risk
- Possible cumulative effects with harms of nicotine in pregnancy

Alcohol Use

- Low-level alcohol use is likely very safe: maternal serum level = milk level
  - Maternal BAL 0.08 g/dL -> 0.8% alcohol by volume in milk. Similar to orange juice open in the fridge.
- Heavy/daily drinking could sedate infant
  - For a 60kg woman, 6 standard drinks at once -> infant serum EtOH levels that could depress suckling reflex by 18%

Other Medical Contraindications

Infant

- Classic galactosemia

Mother

- HTLV
- Radiation therapy

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Breastfeeding Resources

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Breastfeeding Support Resources

- Lactation consultants at VMFH (referral)
- Check if your local hospital is certified Baby-Friendly or equivalent
  (In our area: St Michael, St Joseph, St Anthony, Olympic Medical Center, Jefferson Healthcare, Tacoma General, Madigan, …)
- Academy of Breastfeeding Medicine "Find a Physician" (nearest: Fall City, WA)
- Local breastfeeding coalitions supported through the DOH and county public health:
  - Kitsap (https://kitsapsupportsbreastfeeding.com),
  - Native American Breastfeeding Coalition (nativebreastfeeding.org),
  - Pierce (https://www.piercecountylactationalliance.com),
  - South Sound (https://www.southsoundlactationnetwork.org),
  - Washington State breastfeeding support through the DOH (https://doh.wa.gov/you-and-your-family/lactation)

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Clinician Resources

FREE!

** LactMed @ NIH (google “Lactmed + med name”) **

- Physician Guide to Breastfeeding website
- Academy of Breastfeeding Medicine
- E-lactancia website and LactRx App
- InfantRisk site and hotline
- Dr MILK moderated Facebook group

Not Free, but Great

** InfantRisk App ** ($9.99/year)

- Hale’s Medications and Mother’s Milk (book and site)
- ACOG, AAFP, AAP resources (membership required)

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Patient-Facing Resources

- Kellymom.com
- IABLE Breastfeeding Handouts
- La Leche League
- MotherToBaby.org
- FirstDroplets.org

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Take-Home Points

1. Breastfeeding is good for mom and baby, and also requires work! Do not advise “pump and dump” without a good reason.
2. All initial diagnostic imaging, most specialty imaging, and many meds are safe for breastfeeding.
3. Use an app or website to find out if meds are safe in breastfeeding: LactMed, InfantRisk are good sources.
4. There are only a few medical contraindications to breastfeeding (HIV, active substance use, galactosemia, etc.).
5. Many resources exist to support breastfeeding dyads!

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Questions

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