

When Exclusive Breastfeeding is not Possible

During the Maternity Hospital Stay



**Texas Children's
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**Pavilion
for Women**

Learning Objectives

- Describe the reasons supplementation for the breastfed infant may be considered
- Describe alternative feeding methods when providing supplemental feedings
- Discuss strategies to support lactation and facilitate breastfeeding when providing supplemental feedings

Why are Supplements Needed?

- Infant condition resulting in poor milk transfer
- Maternal condition resulting in low milk supply
- Inadequate breastfeeding despite interventions

Infant Conditions That *May* Require Supplementation

- Hypoglycemia
- Hyperbilirubinemia
- Weight loss > 7% of birthweight
- Dehydration
- Prematurity

What percent of healthy breastfed newborns does the American Academy of Pediatrics state should need supplementation?

*American Academy of Pediatrics
Academy of Breastfeeding Medicine*

20%

3 Goals of Breastfeeding Management

Low risk mom-infant

Attachment

Breast milk production

Calories

High risk mom-infant

Calories

Breast milk production

Attachment

Morton, Hall & Pessl (2014). Nursing Women's Health

Breastfeeding Management Goals

Low-Risk Mother-Infant



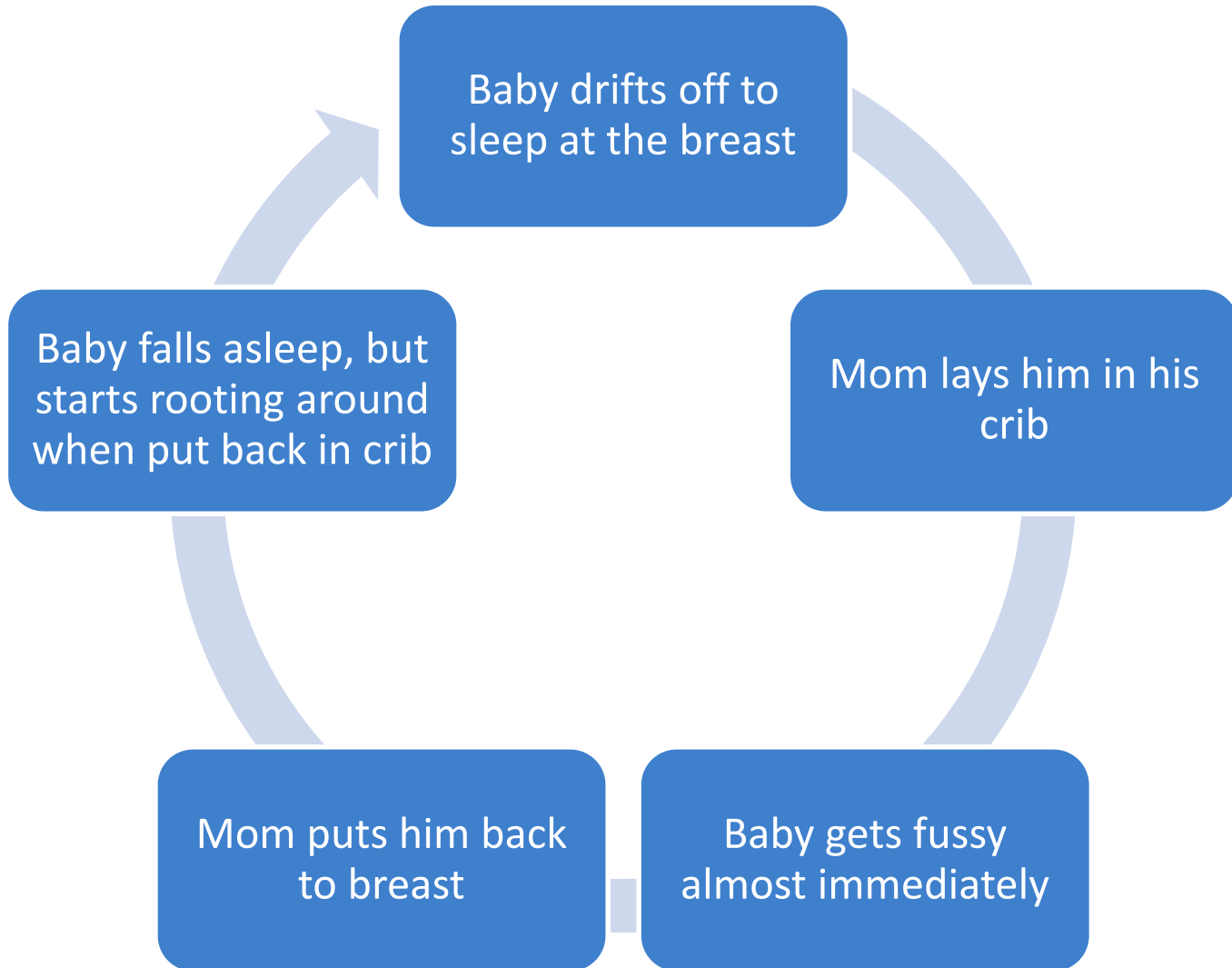
Attachment

Breast milk production

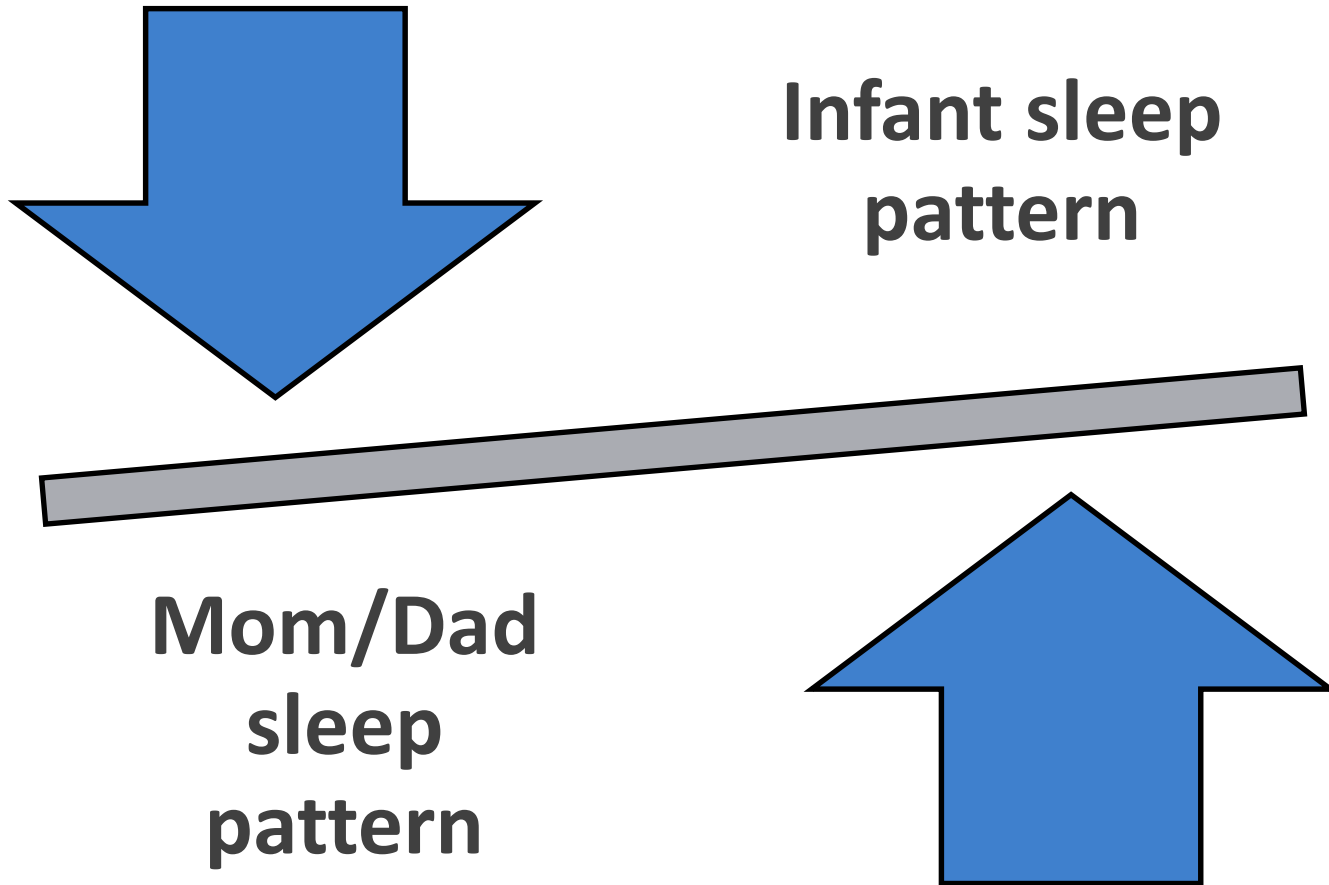
Calories

Infant Behavior/Sleep Patterns

There's No Place Like Home

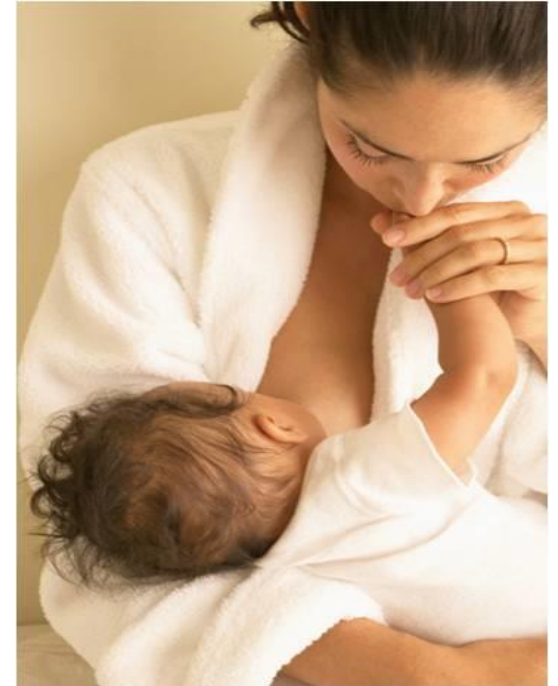


Managing the Second Night



Managing the Second Night

- Ease baby into a deep sleep
- Don't try to burp him
- Mom and dad take turns holding the baby skin to skin
- Avoid swaddling – let babies use their hands



Sleepy Baby

A word cloud of baby care tips for a sleepy baby. The words are arranged in a cluster, with 'Unswaddle' being the largest and most prominent. Other words include 'Tickle feet', 'Dim lights', 'Change diaper', 'Express milk', 'Skin to skin', 'Rub back', and 'Wash face'. The colors range from dark green to light green and yellow.

Tickle feet
Unswaddle
Dim lights
Change diaper
Express milk
Rub back
Wash face
Skin to skin

Addressing Maternal Concerns About Milk Production

Why the First 14 Days Are So Important



Strategies to Maximize Milk Production

Access

- Rooming in
- Skin to skin

Cues

- Infant led
- Frequency

Technique

- Latch
- Stimulation

Breastfeeding Management Goals

High-Risk Mother-Infant

Calories

Breast milk production

Attachment

High-Risk Infant Conditions

- Hypoglycemia
- Hyperbilirubinemia
- Weight loss $> 7\%$ of BW
- Dehydration
- Prematurity

Hypoglycemia: Emerging Evidence

Harris et al Lancet 2013 “Sugar Babies study”

- RDBPCT of 514 infants treated w/dextrose gel or placebo
- Dextrose gel more effective compared w/placebo

Harris et al J Peds 2015 Sugar Babies follow-up

- Of the Harris cohort, 36% had neuro impairment (1 severe, 6 moderate, 59 mild)

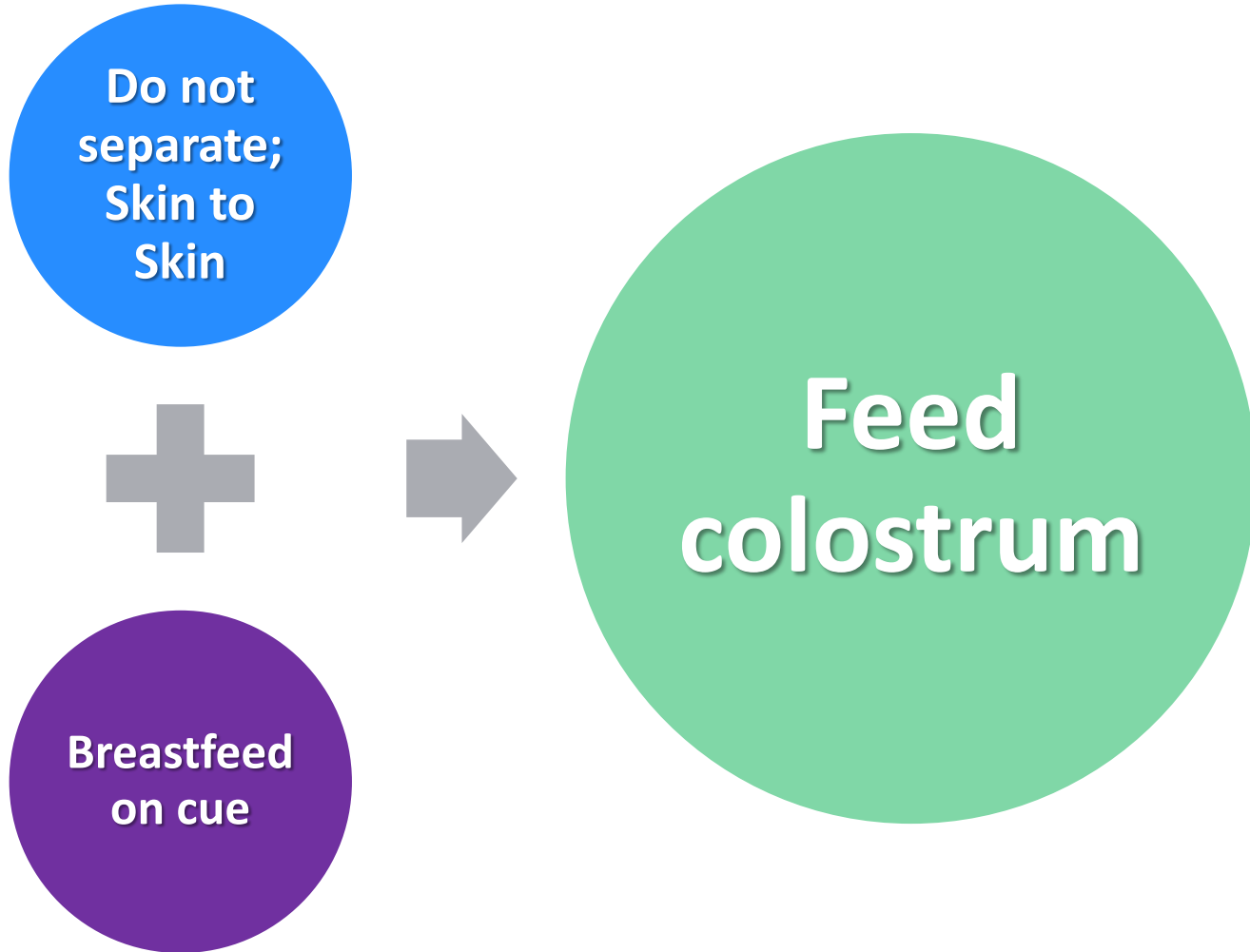
McKinlay et al NEJM 2015

- Prospective cohort of 528 hi-risk infants for LBS treated for LBS (<47 mg/dl) not associated with poor neuro

Kaiser et al JAMA 2015

- Controlling for perinatal factors, LBS was associated with poor 4th grade proficiency

Calories + BM Production + Attachment



Neonatal Weight Loss

- Initial postnatal weight loss is nearly universal
- Intake is low during the time of colostrum production
- Most newborns tolerate this brief period of low intake and weight loss

Early Weight Loss Nomograms for Exclusively Breastfed Newborns

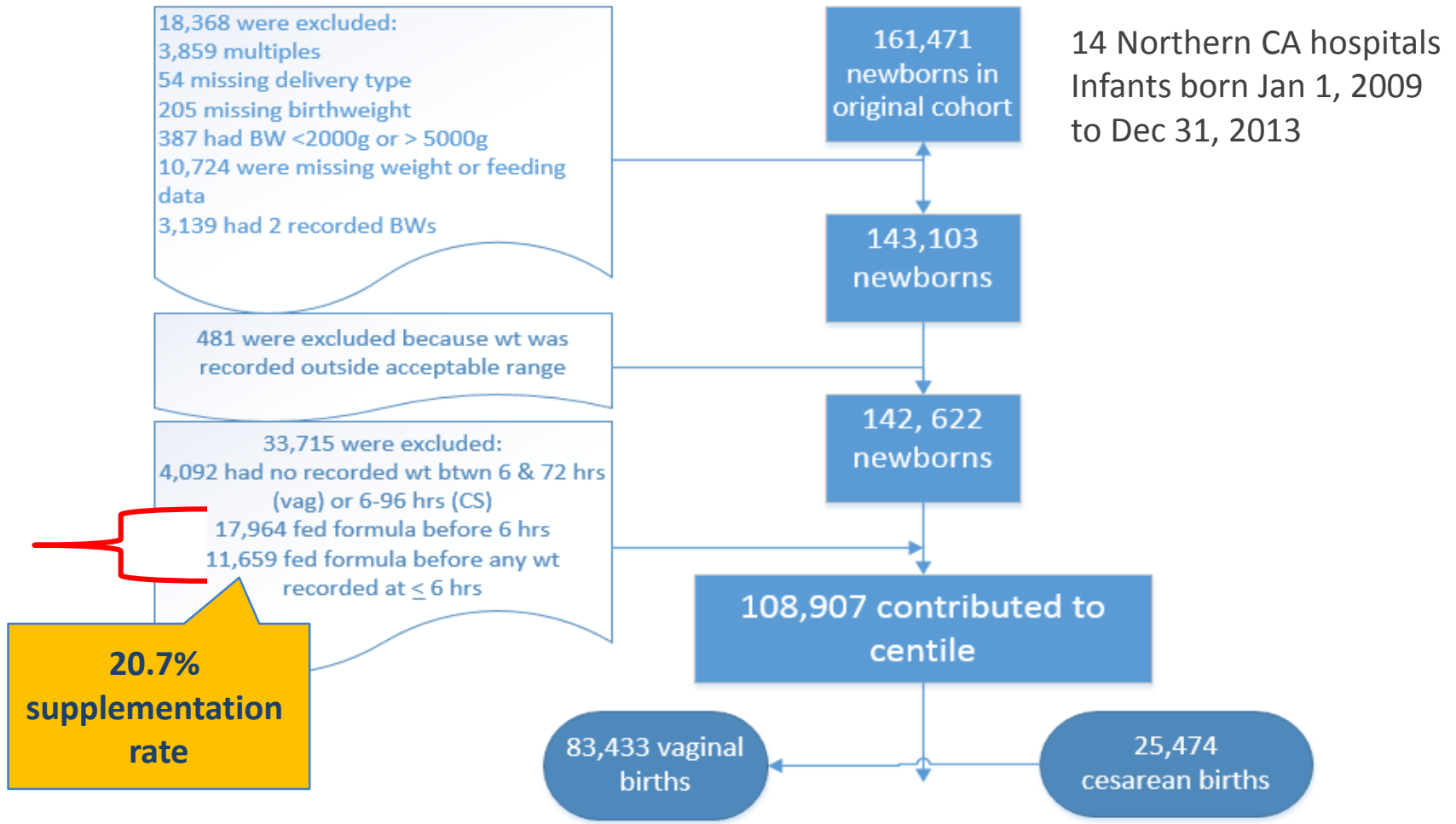
PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Early Weight Loss Nomograms for Exclusively Breastfed Newborns
Valerie J. Flaherman, Eric W. Schaefer, Michael W. Kuzniewicz, Sherian X. Li,
Eileen M. Walsh and Ian M. Paul
Pediatrics; originally published online December 1, 2014;
DOI: 10.1542/peds.2014-1532

The Study Sample

Early Weight Loss Nomograms for Exclusively Breastfed Newborns

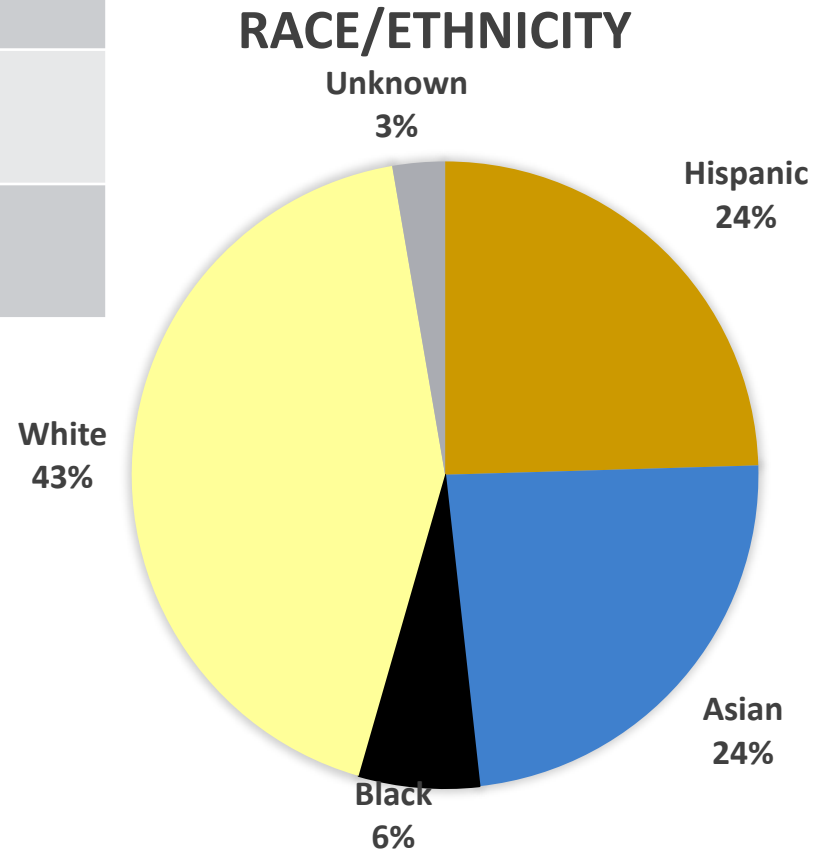


Demographic and Clinical Characteristics of Included Newborns

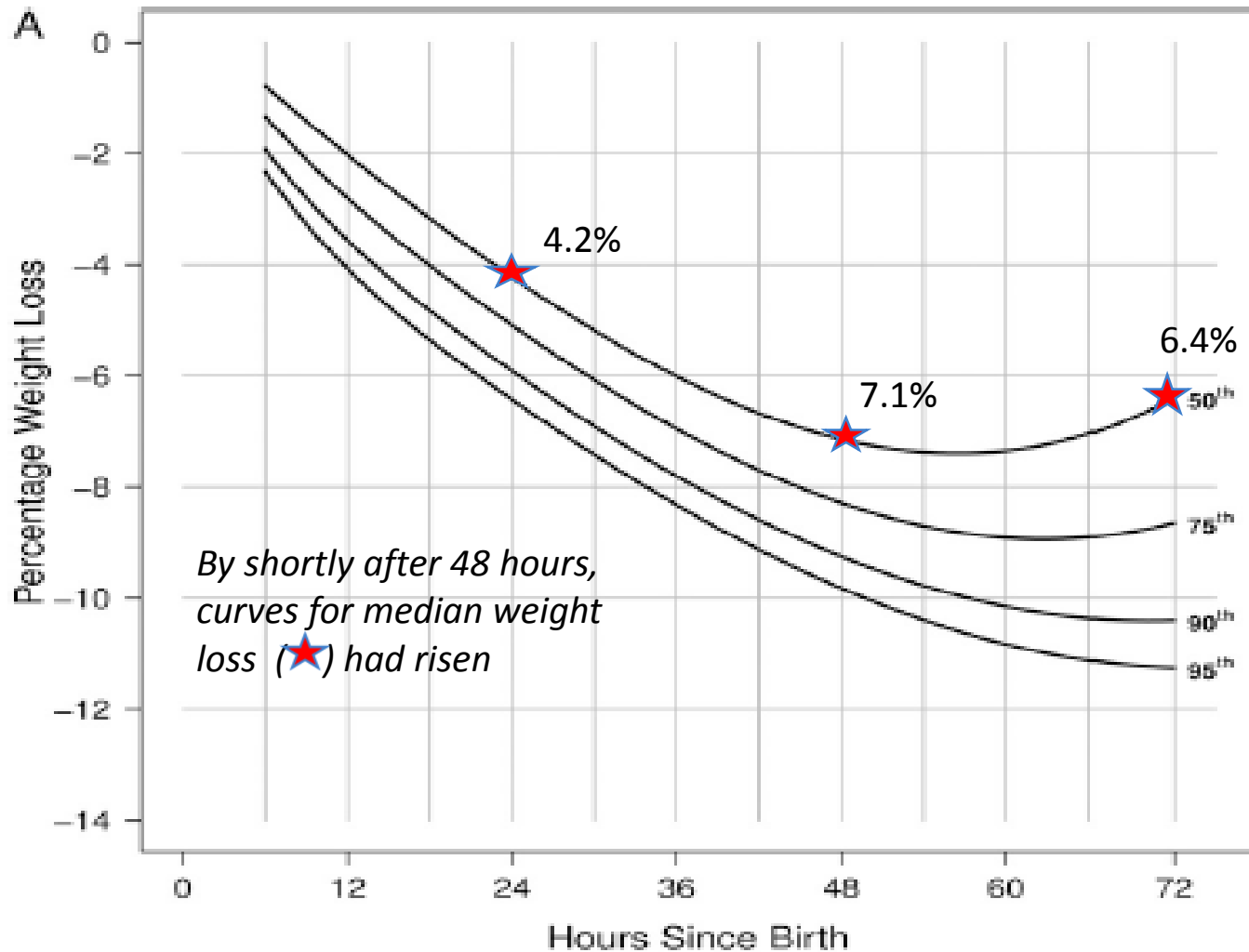
	Vaginal (n = 83,433)	Cesarean (n = 25,474)
BW (g)	3416.9 \pm 426.2 (2000-5000)	3487.7 \pm 426.6 (2010-5000)
GA (wk)	39.2 \pm 1.2 (36-42)	39.1 \pm 1.1 (36-43)
LOS (d)	1.7 \pm 0.8 (1.2-2)	2.8 \pm 0.9 (2.1-3.2)

No data available for:

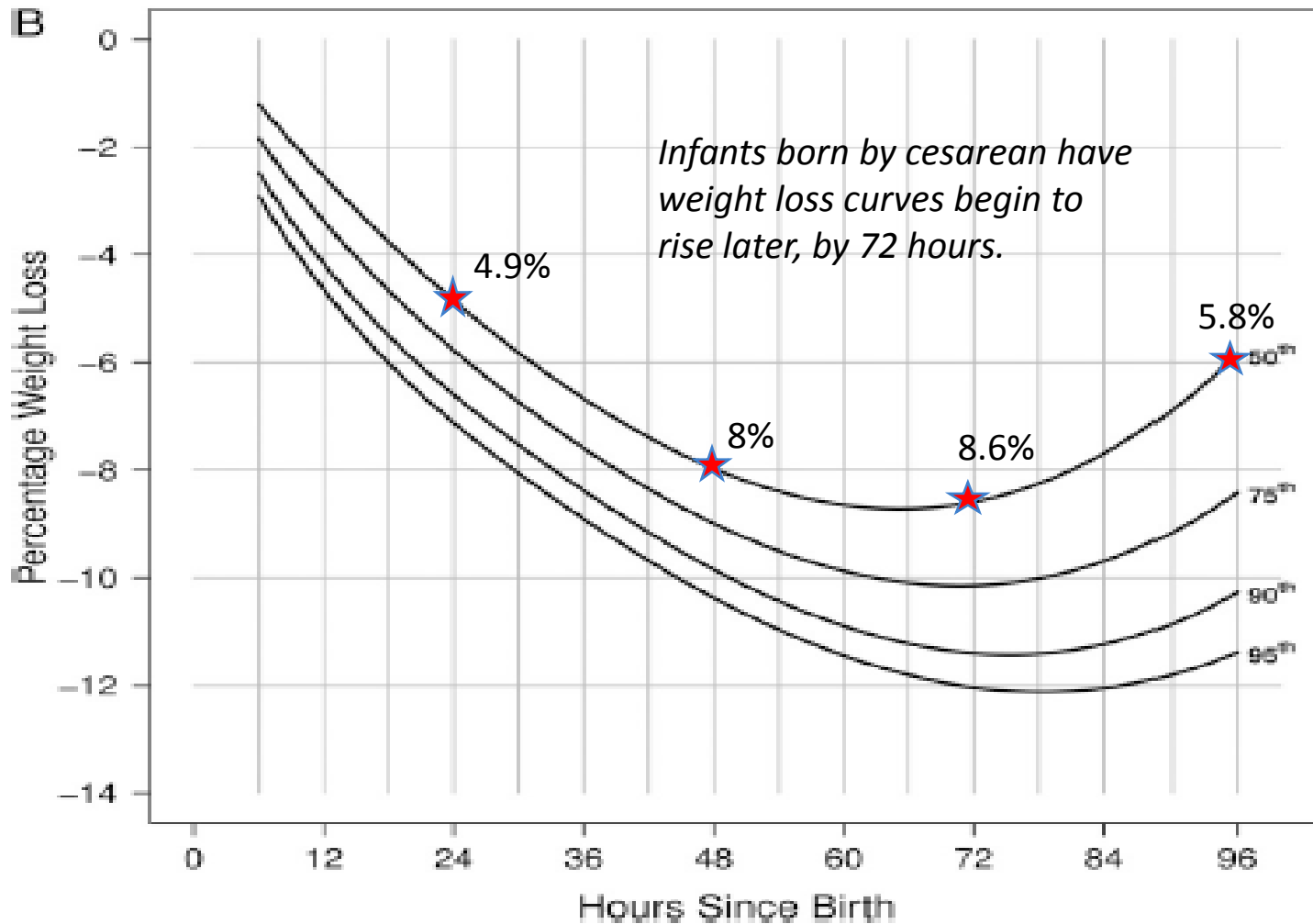
- Parity
- Previous breastfeeding



Estimated Percentile Curves of % Weight Loss by time after Vaginal Birth



Estimated Percentile Curves of % Weight Loss by time after Cesarean Birth















NEWT

Newborn Weight Tool

- Allows clinicians/parents to see how a newborn's weight during the first few days compares with a large sample of exclusively breastfed newborns
- Helps with early identification of weight loss issues

<https://www.newbornweight.org/>

Neonatal Weight Loss

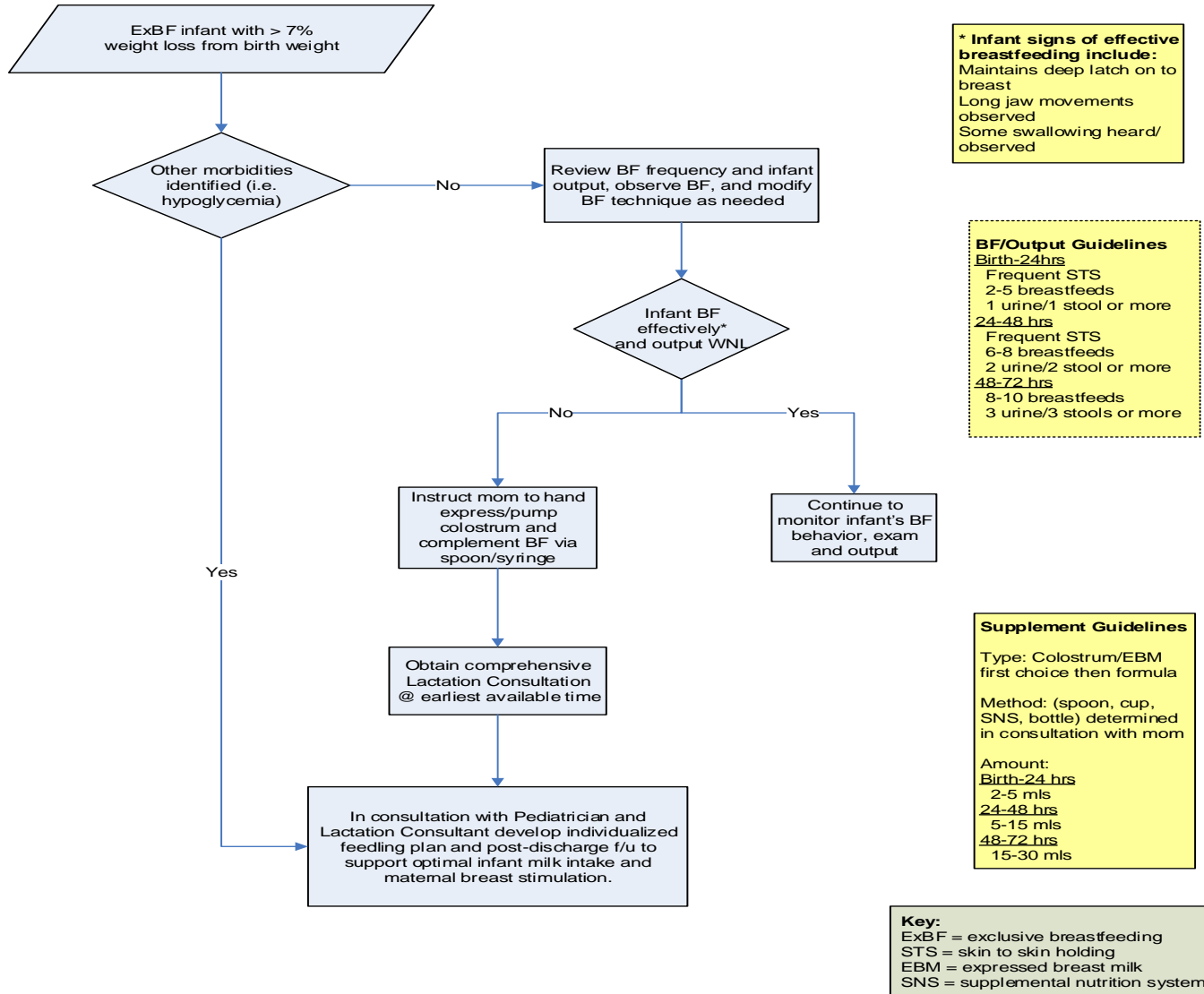
	Birth – 24 hrs	24 – 48 hrs	48 – 72 hrs
Pee		 	  
Poop		 	  
Pounds	Average of 7%, not to exceed 10% (AAP)		

Weight loss of $>7\%$ *may* indicate a possible breastfeeding problem

Breastfed infant with > 7% weight loss algorithm

This algorithm is to be used to facilitate effective breastfeeding and to avoid unnecessary formula supplementation.

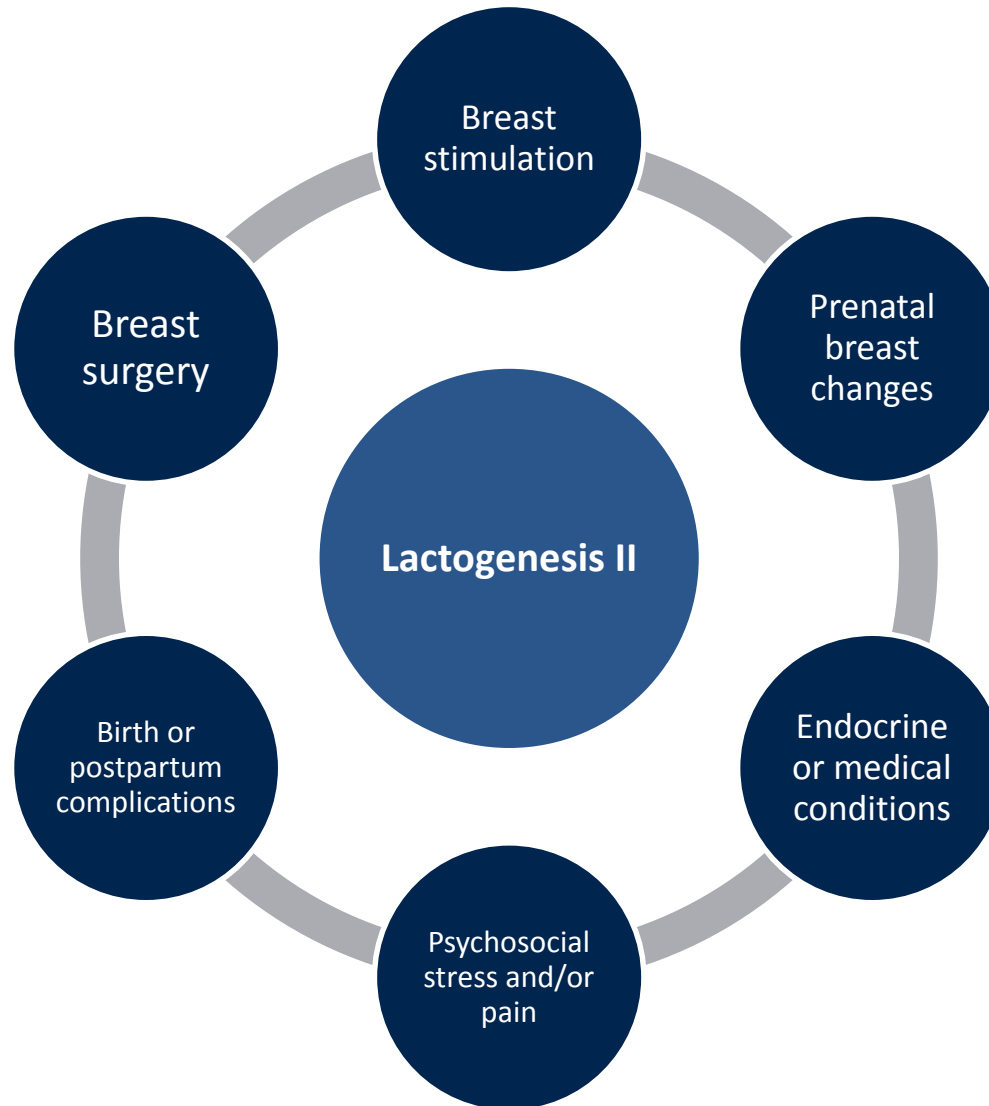
Wednesday, July 13, 2011



High Risk Maternal Conditions

- Inadequate breast stimulation
- History of breast surgery
- Nipple pain/trauma
- Conditions associated with delayed onset of lactogenesis 2 (i.e., obesity, CS, diabetes)
- Insufficient mammary glandular tissue
- Polycystic ovarian syndrome
- Retained placental fragments

Know Your Patient's History



Late Preterm and Multiple Births

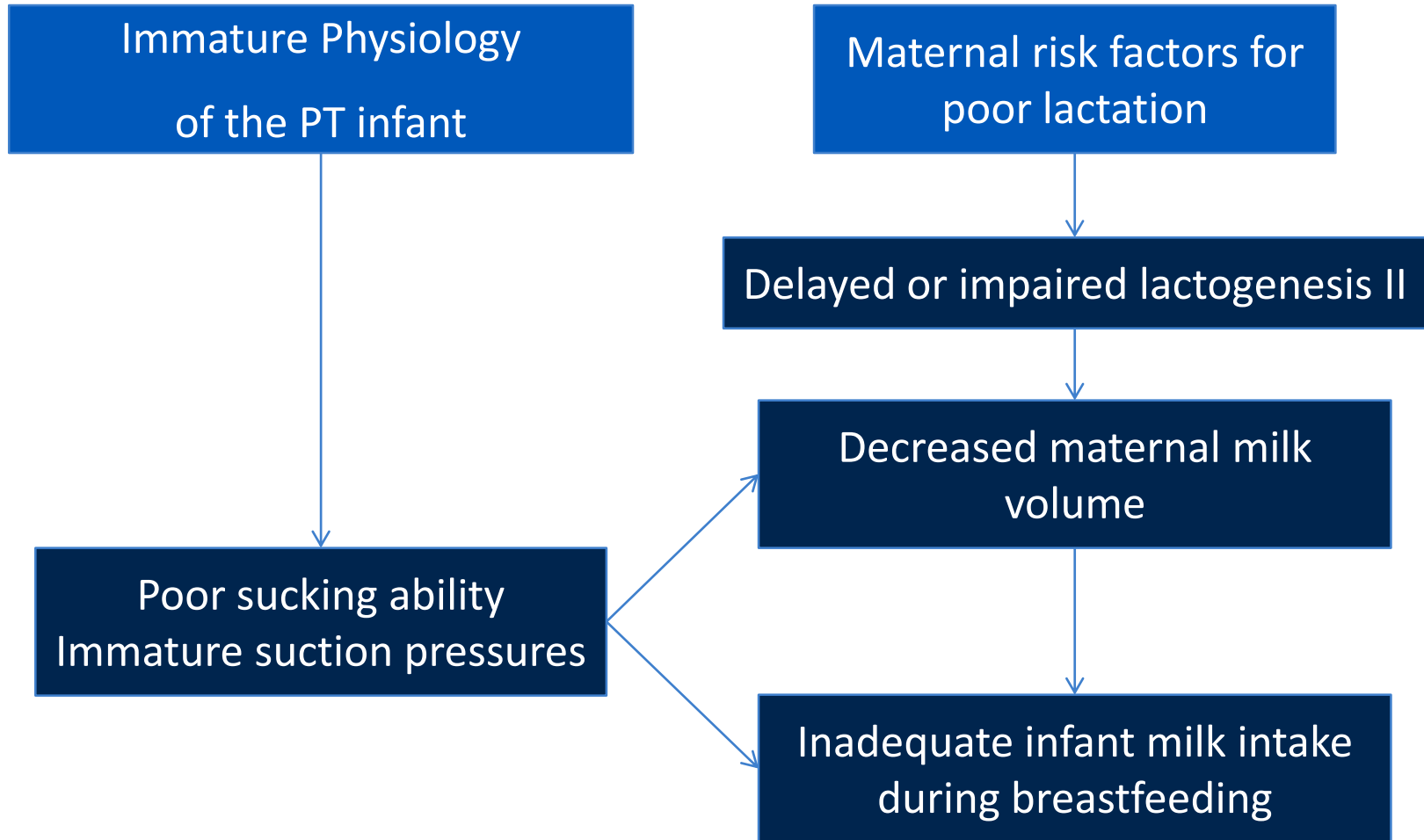
BREASTFEEDING MANAGEMENT IN SPECIAL CONDITIONS

Late Preterm Infants

At higher risk for:

- Temperature instability
- Hypoglycemia
- Respiratory distress
- Hyperbilirubinemia
- **Ineffective breastfeeding**

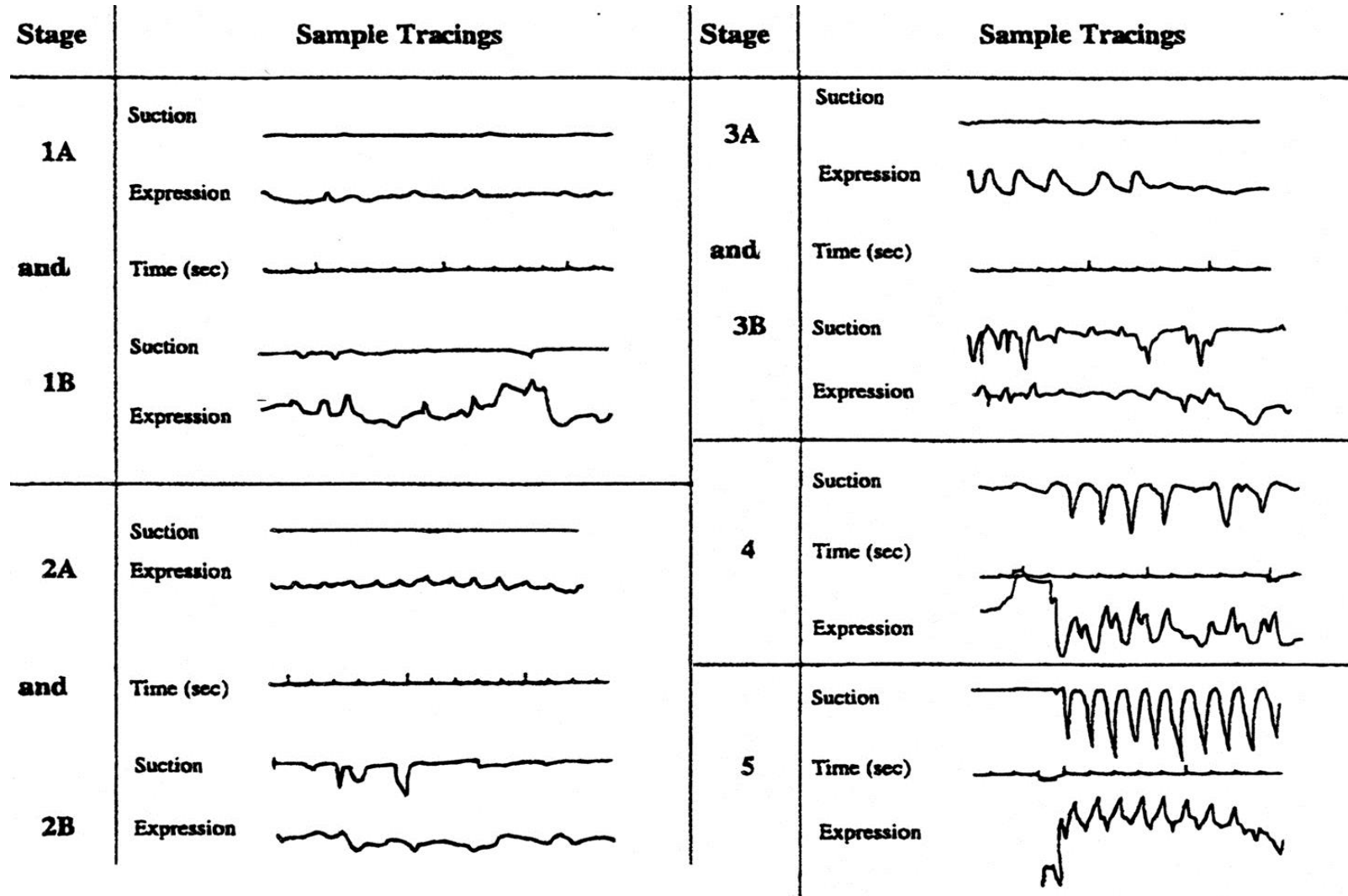
Maternal and Preterm Infant Risk Factors



Adapted from Meier et al, Clin Perinat, 2013

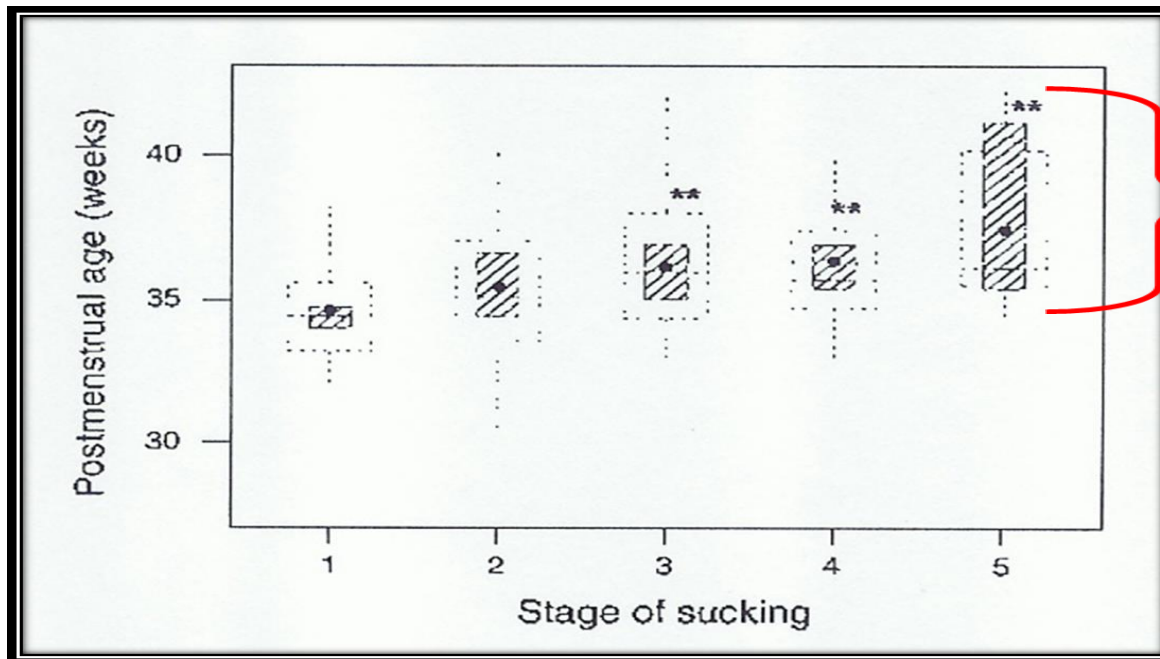
Developmental Sucking Scale in Preterm Infants

Lau, et al. (2000). Acta Paediatr, 89, 846-952



Feeding Challenges for the Late Preterm Infant

- Immature behavior/state
- Inconsistent SSB patterns
- At risk for underconsumption of milk



Late preterm infants are in this group with the largest distribution

Breastfeeding Management for the Late Preterm Infant

Issues to Consider:



C Calories (measure milk intake)



B Breast stimulation



A Attachment (sustain latch)

Have a Plan!

- ✓ Comprehensive lactation support during maternity stay
- ✓ Detailed discharge feeding plan
- ✓ Referral to lactation consultant and post-discharge breastfeeding resources

Considerations When Supplemental Feedings Are Indicated

What milk type will be provided?

- Mother's milk or colostrum
- Donor milk
- Infant formula

How much milk should be given?

- Infant's age?
- Replace or complement a breastfeed?
- How often to offer?

How long is the supplement needed?

- Short-term?
- Long-term?
- Uncertain?

Supplementation Guidelines

Day of Life	Milk Volume
Birth – 24 hours	2 – 5 mL/feed
24 – 48 hours	5 – 15 mL/feed
48 – 72 hours	15 – 30 mL/feed

Multiple Births

Common Concerns

**Produce
enough?**

- 2 to 4 babies
- Adequate stimulation

**Manage
feedings?**

- Together or separate
- Modified demand

**Which
breast?**

- Rotate or assign
- Feeding behaviors

Alternative Feeding Methods: Which Method for Which Situation?

Situations/Factors:

- Allows simultaneous breast stimulation with supplement
- When long-term supplements are needed
- Good for small feedings of colostrum
- When short-term feedings of small volumes are used
- Rewards/entices infant to suck at breast



Spoon



Cup



Syringe



Supply Line



Bottle

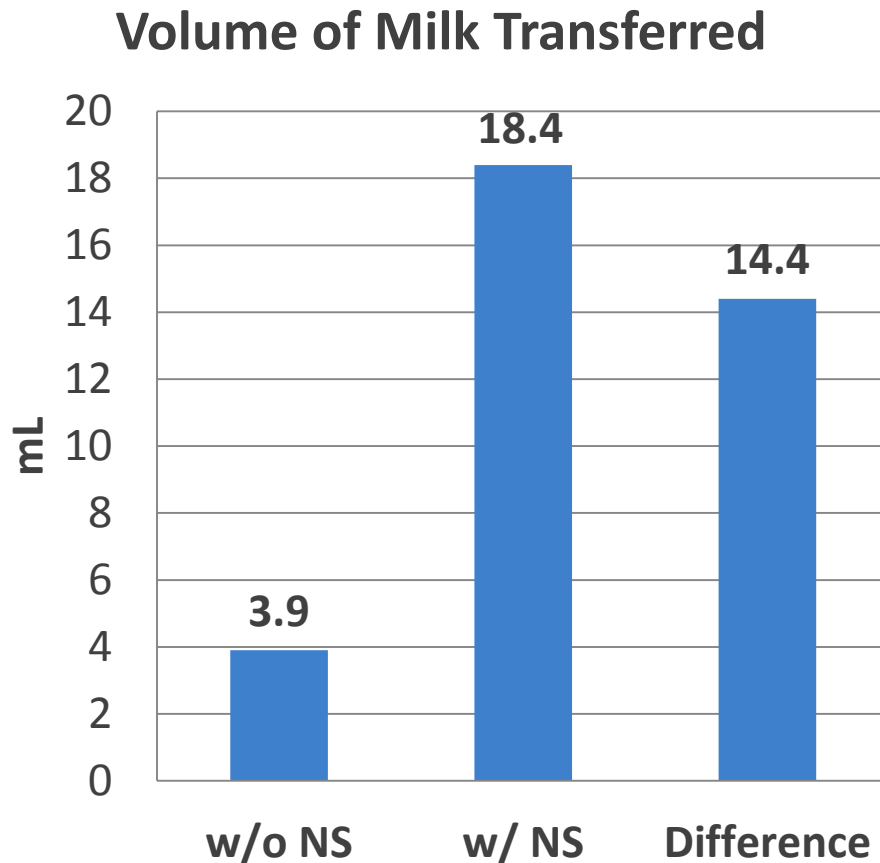
Achieving Sustained Attachment to the Maternal Breast during Feeding

- Assess shape/function of nipple area
- Determine optimal positioning technique
- Assess infant's suck/swallow ability
- Determine need for nipple shield

Why Nipple Shields?

- May compensate for developmental deficiencies in sucking pressure
 - Allows infant to use compression with little or minimal suction
 - Stays in mouth during sucking pauses
- Provides intraoral stimulus
- Ready supply of milk (contingent on maternal milk ejection reflex)

Effect of Nipple Shields on Milk Transfer and Duration of Breastfeeding



Meier, Brown, Hurst et al, 2000, JHL

Protecting Maternal Milk Production

Subcontractor Needed!

Infant not able to breastfeed directly

- Pump acts as mom's mechanical baby

Infant not breastfeeding well

- Pump acts as baby's twin

Mother returning to work

- Pump acts as mom's baby away from home



Which Pump Is Best?



Take Home Messages

- Breastfeeding exclusively for the first 2 weeks promotes adequate milk production.
- Some maternal conditions delay the onset of lactogenesis II beyond 72 hours post-birth.
- The duration and volume needed when supplemental feedings are indicated will usually determine the method used.
- A collaborative, comprehensive and detailed feeding plan will ensure the mother reaches her full lactation potential.