Physician and Heathcare Team Support for Breastfeeding

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1

Objectives

1. Explain the impact of early postpartum supplementation on breastfeeding rates.
2. Describe best practices for early postpartum care to optimize breastfeeding success.

2

Marta is a healthy 32 yo G1P0 is seen at 36 weeks of pregnancy in the office for a routine check. Her pregnancy has been unremarkable. She has a strong intention to breastfeed her infant. What are the most impactful strategies to ensure that she can meet her breastfeeding goals?

3

Best Evidence for Getting off to a Great Start with Breastfeeding

- Not supplementing a healthy term infant unless medically indicated is the gold standard of success.
- Exclusive breastfeeding = only breastfeeding/mothers' own milk in the hospital
- Exclusive breastfeeding (at discharge, 3mo, 6 mo) is the outcome measure that is used to determine effectiveness of breastfeeding support strategies
- Feeding a neonate anything other than mothers' own milk is a strong risk factor for premature weaning/not meeting one's breastfeeding intentions.

4

We can tell Marta that exclusive breastfeeding in the hospital is the best strategy for getting off to a great start.

Marta would like to know what she needs to do to make sure that she exclusively breastfeeds.

5

The Baby Friendly Hospital Initiative (BFHI)

BFHI incorporates the best evidence in optimizing exclusive breastfeeding rates at discharge
BFHI practices are associated with improved breastfeeding rates in the first 6 mo pp

Let's look at some history…

6

Infant Mortality Rates 1990 per 1000

https://data.worldbank.org/indicator/SP.DYN.IMRT.IN?end=2023&start=2023&view=map&year=1990

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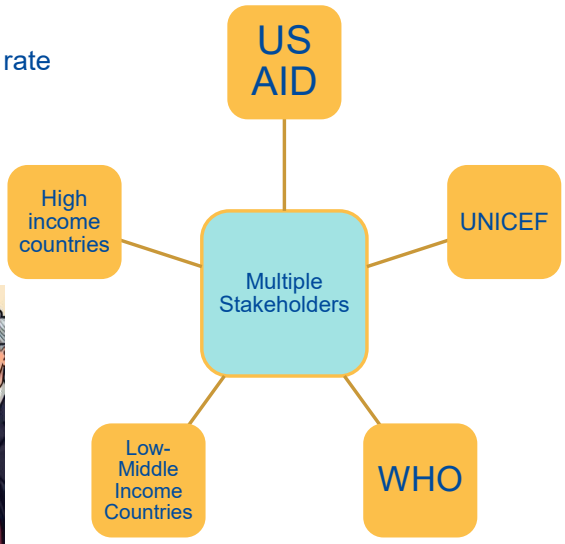
WHO/UNICEF Policymakers' meeting on 'Breastfeeding in the 1990's: A Global Initiative'

Goal = Decrease infant mortality rate



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INNOCENTI DECLARATION

On the Protection, Promotion and Support of Breastfeeding

RECOGNISING that

Breastfeeding is a unique process that:

- provides ideal nutrition for infants and contributes to their healthy growth and development;
- reduces incidence and severity of infectious diseases, thereby lowering infant morbidity and mortality;
- contributes to women's health by reducing the risk of breast and ovarian cancer, and by increasing the spacing between pregnancies;
- provides social and economic benefits to the family and the nation;
- provides most women with a sense of satisfaction when successfully carried out; and that

Recent research has found that:

- these benefits increase with increased exclusiveness[1] of breastfeeding during the first six months of life, and thereafter with increased duration of breastfeeding with complementary foods, and
- programme interventions can result in positive changes in breastfeeding behaviour;

The Innocenti Declaration was produced and adopted by participants at the WHO/UNICEF policymakers' meeting on "Breastfeeding in the 1990s: A Global Initiative", co-sponsored by the United States Agency for International Development (A.I.D.) and the Swedish International Development Authority (SIDA), held at the Spedale degli Innocenti, Florence, Italy, on 30 July - 1 August 1990. The Declaration reflects the content of the original background document for the meeting and the views expressed in group and plenary sessions.

WE THEREFORE DECLARE that

As a global goal for optimal maternal and child health and nutrition, all women should be enabled to practise exclusive breastfeeding and all infants should be fed exclusively on breast milk from birth to 4-6 months of age. Thereafter, children should continue to be breastfed, while receiving appropriate and adequate complementary foods, for up to two years of age or beyond. This child-feeding ideal is to be achieved by creating an appropriate environment of awareness and support so that women can breastfeed in this manner.

Attainment of the goal requires, in many countries, the reinforcement of a "breastfeeding culture" and its vigorous defence against incursions of a "bottle-feeding culture." This requires commitment and advocacy for social mobilization, utilizing to the full the prestige and authority of acknowledged leaders of society in all walks of life.

Efforts should be made to increase women's confidence in their ability to breastfeed. Such empowerment involves the removal of constraints and influences that manipulate perceptions and behaviour towards breastfeeding, often by subtle and indirect means. This requires sensitivity, continued vigilance, and a responsive and comprehensive communications strategy involving all media and addressed to all levels of society. Furthermore, obstacles to breastfeeding within the health system, the workplace and the community must be eliminated.

Measures should be taken to ensure that women are adequately nourished for their optimal health and that of their families. Furthermore, ensuring that all women also have access to family planning information and services allows them to sustain breastfeeding and avoid shortened birth intervals that may compromise their health and nutritional status, and that of their children.

All governments should develop national breastfeeding policies and set appropriate national targets for the 1990s. They should establish a national system for monitoring the attainment of their targets, and they should develop indicators such as the prevalence of exclusively breastfed infants at discharge from maternity services, and the prevalence of exclusively breastfed infants at four months of age.

National authorities are further urged to integrate their breastfeeding policies into their overall health and development policies. In so doing they should reinforce all actions that protect, promote and support breastfeeding within complementary programmes such as prenatal and perinatal care, nutrition, family planning services, and prevention and treatment of common maternal and childhood diseases. All healthcare staff should be trained in the skills necessary to implement these breastfeeding policies.

[1]Exclusive breastfeeding means that no other drink or food is given to the infant; the infant should feed frequently and for unrestricted periods.

[2]World Health Organisation, Geneva, 1989.

OPERATIONAL TARGETS:
All governments by the year 1995 should have:

- appointed a national breastfeeding coordinator of appropriate authority, and established a multisectoral national breastfeeding committee composed of representatives from relevant government departments, non-governmental organizations, and health professional associations;
- ensured that every facility providing maternity services fully practises all ten of the *Ten Steps to Successful Breastfeeding* set out in the joint WHO/UNICEF statement[2] "Protecting, promoting and supporting breast-feeding: the special role of maternity services";
- taken action to give effect to the principles and aim of all Articles of the International Code of Marketing of Breast-milk Substitutes and subsequent relevant World Health Assembly resolutions in their entirety; and
- enacted imaginative legislation protecting the breastfeeding rights of working women and established means for its enforcement.

We also call upon international organizations to:

- draw up action strategies for protecting, promoting and supporting breastfeeding, including global monitoring and evaluation of their strategies;
- support national situation analyses and surveys and the development of national goals and targets for action; and
- encourage and support national authorities in planning, implementing, monitoring and evaluating their breastfeeding policies.

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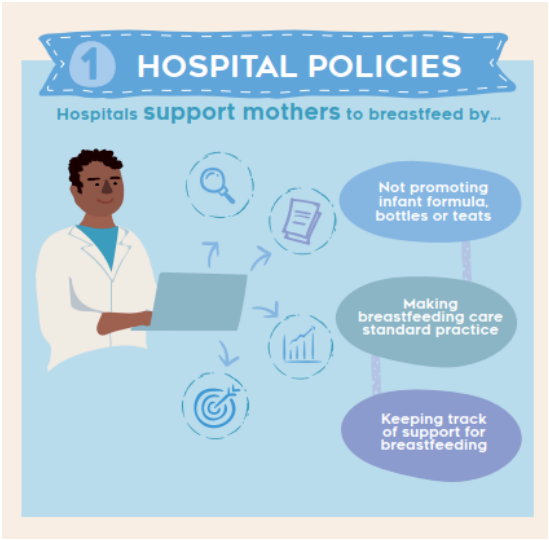

10


3
ANTENATAL CARE
Hospitals support mothers to breastfeed by...
importance of breastfeeding
Discussing the importance of breastfeeding for babies and mothers
Preparing women in how to feed their baby


4
CARE RIGHT AFTER BIRTH
Hospitals support mothers to breastfeed by...
Encouraging skin-to-skin contact between mother and baby soon after birth
Helping mothers to put their baby to the breast right away

11


5
SUPPORT MOTHERS WITH BREASTFEEDING
Hospitals support mothers to breastfeed by...
Checking positioning, attachment and suckling
Giving practical breastfeeding support
Helping mothers with common breastfeeding problems


6
SUPPLEMENTING
Hospitals support mothers to breastfeed by...
Giving only breast milk unless there are medical reasons
Prioritizing donor human milk when a supplement is needed
Helping mothers who want to formula feed to do so safely

12


7
ROOMING-IN
Hospitals support mothers to breastfeed by...
Letting mothers and babies stay together day and night
Making sure that mothers of sick babies can stay near their baby


8
RESPONSIVE FEEDING
Hospitals support mothers to breastfeed by...
Helping mothers know when their baby is hungry
Not limiting breastfeeding times

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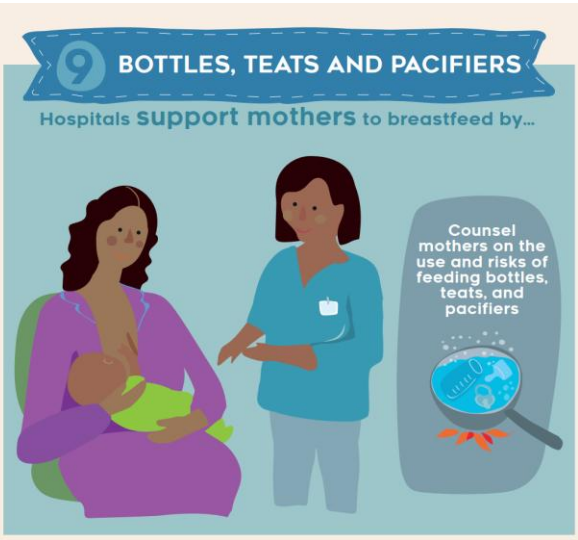
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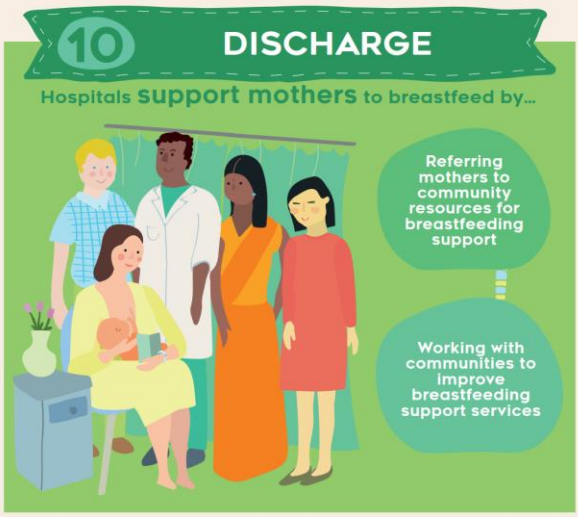
BOTTLES, TEATS AND PACIFIERS
Hospitals support mothers to breastfeed by...
Counsel mothers on the use and risks of feeding bottles, teats, and pacifiers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DISCHARGE
Hospitals support mothers to breastfeed by...
Referring mothers to community resources for breastfeeding support
Working with communities to improve breastfeeding support services

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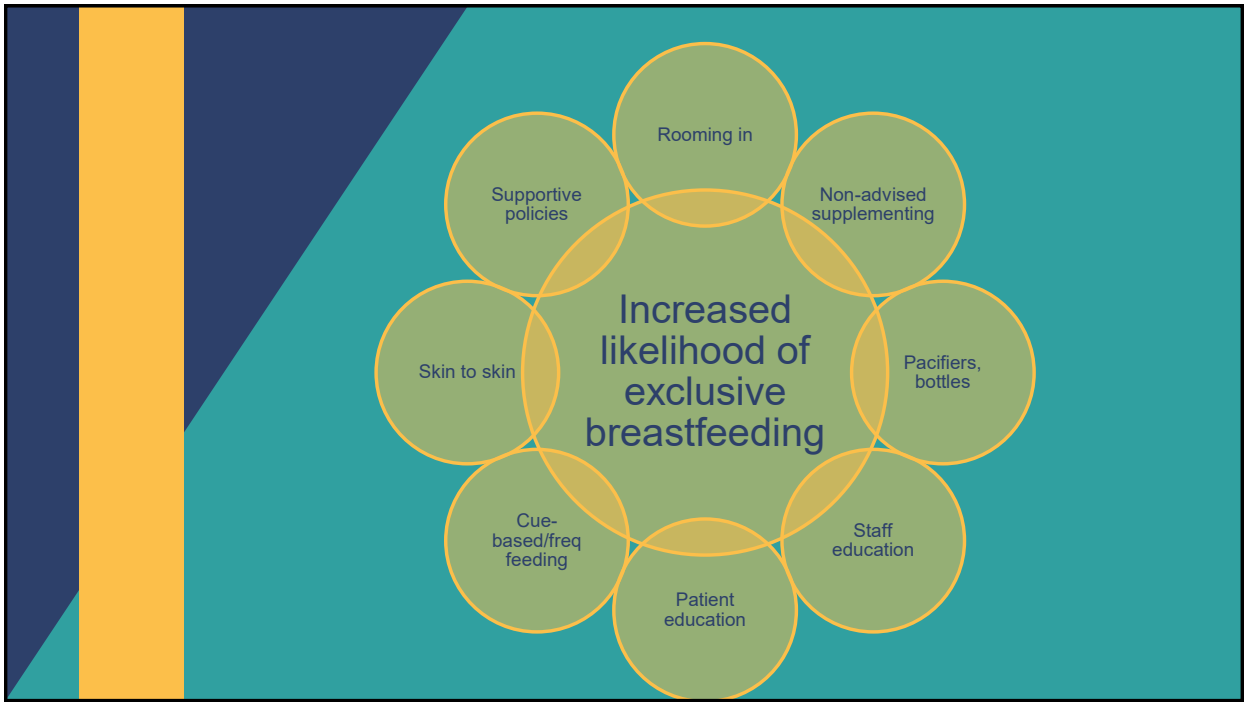

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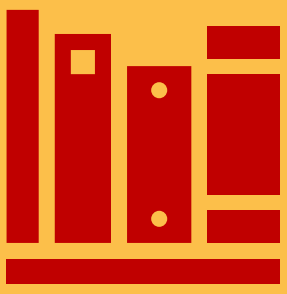
Evidence that Exclusive Breastfeeding Matters



16

Evidence-Based Updates on the First Week of Exclusive Breastfeeding Among Infants ≥ 35 Weeks

'Early introduction of supplemental formula is associated with a greater than twofold increase in risk of early cessation of breastfeeding even when controlling for confounding variables' (J Pediatr 2002,141(5):659-664; Pediatrics 2012 130(1) 54-60)

'Among almost 1500 women in the Infant Feeding Practices Study II, only early exclusive breastfeeding remained significant for achieving intended breastfeeding duration' Pediatrics 2012 130(1) 54-60

'Because evidence continues to accrue that supplementation in the first days after birth has major health risks, judicious use of supplementation is a critical goal, with a return to exclusivity whenever possible' J Pediatr (Rio J) 2018, 94(3) 258-267; JAMA Pediatr 2018; 172(7);e181161)

Feldman Winter et al Pediatrics 145(4) April 2020

17

Effect of Early Limited Formula on Breastfeeding Duration in the First Year of Life

Researchers hypothesized that early limited formula supplementation, 10 ml, given by syringe for each feeding until milk came in would prevent excessive formula supplementation, and lead to more successful breastfeeding rates.

82 breastfed

78% breastfed without formula at 1 week

82 breastfed + 10 ml of formula via syringe with Each feeding until 'milk came in'

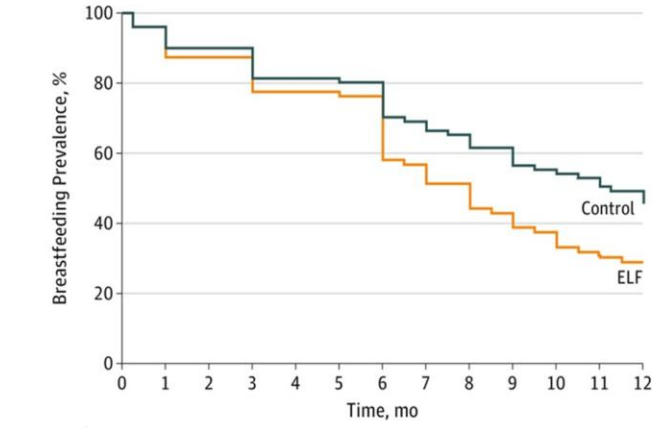
63.3% breastfed without formula at 1 week

'The receipt of formula at 1 week was very strongly associated with all subsequent breastfeeding outcomes'

Flaherman et al JAMA Pediatr 2019; 173(8): 729-735

18

Flaherman V Et al Effect of Early Limited Formula on Breastfeeding Duration in the First Year of life: A Randomized Clinical Trial JAMA Pediatrics 2019 173:729-735



No. at risk				
Control	82	74	59	41
ELF	82	72	58	33

ELF Early Limited Formula

19

Pre-lacteal feeds = fluids other than mothers' own milk in the first 3 days after birth

20

48 studies:

32- High income countries
7- Upper-Middle-income
7- Low-Middle-income
2- multi-country/income

Systematic Review and Meta-Analysis of Prospective Studies on Prelacteal Feeds and Neonatal Introduction of Formula (in the first 4 weeks of life)

Perez-Escamilla Matern Child Nutr. 2022;18(S3):e13368.

21

Relative Risk of prelacteal feeds and cessation of exclusive breastfeeding under 6 mo

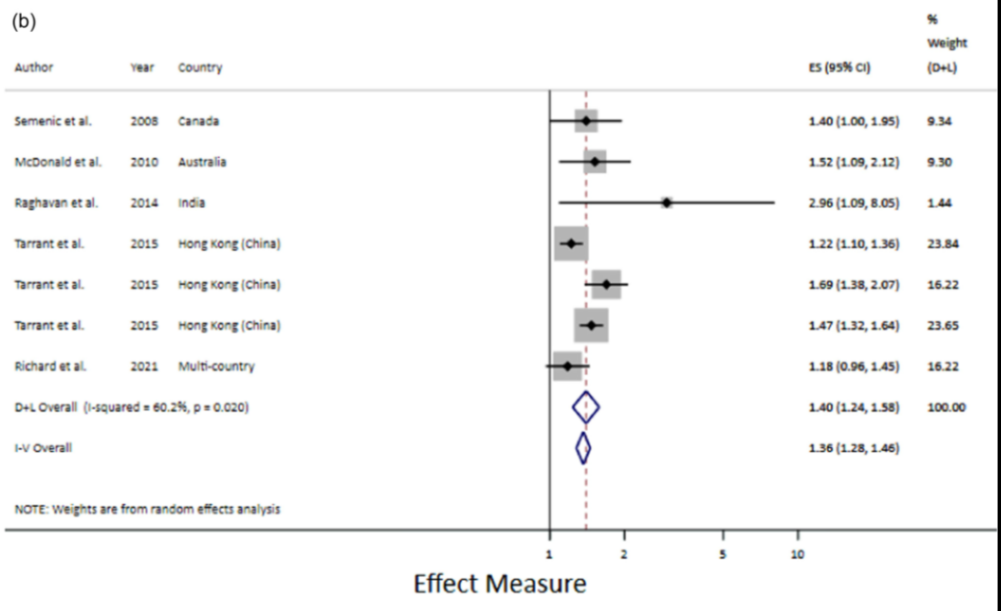
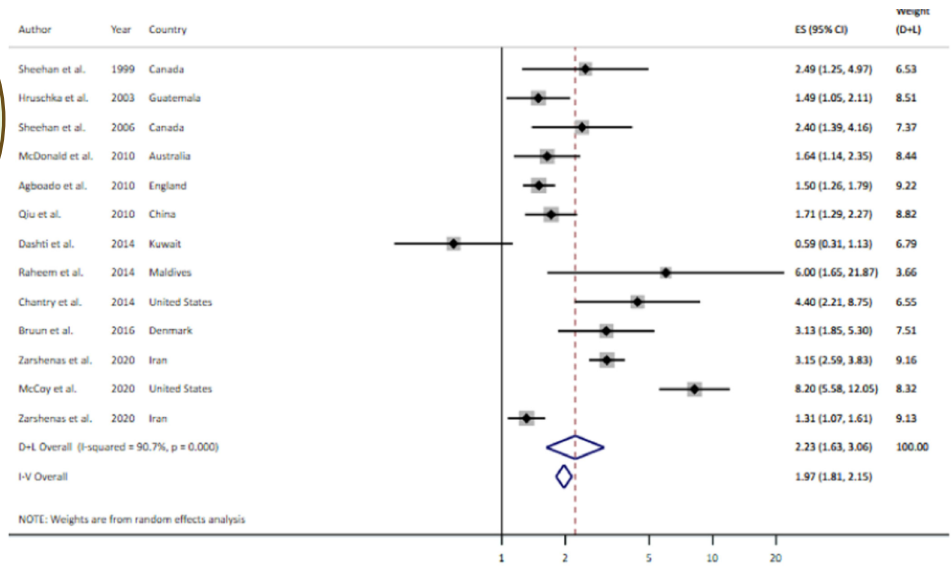


FIGURE 4 (a) Prelacteal feeds and exclusive breastfeeding cessation among infants under 6 months. (b) Prelacteal feeds and exclusive breastfeeding cessation among infants under 6 months. Only studies reporting impact measures for milk-based prelacteals.

22

Relative Risk of prelacteal feeds and any breastfeeding cessation under 6 mo



Perez-Escamilla Matern Child Nutr. 2022;18(S3):e13368.

23

Rate of Receiving Formula Before 2 Days of Age in the USA 2019

19.2% National in the USA

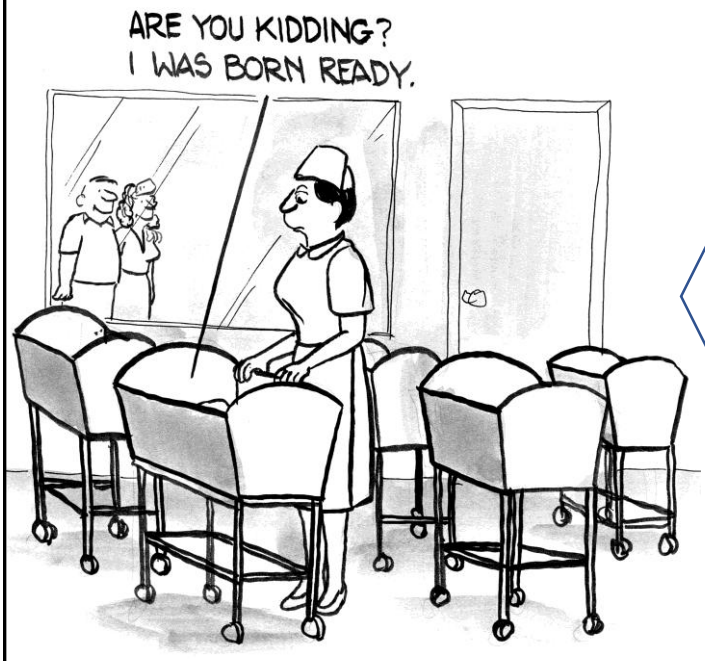
9.5% in Vermont (Lowest)

25.2% in New Jersey (Highest)

21.4% West Virginia

CDC Breastfeeding Report Card 2022- https://www.cdc.gov/breastfeeding-data/media/pdfs/2024/06/2022-Breastfeeding-Report-Card-508.pdf

24



What Can We Do To Lessen Early Non-Medically Indicated Supplementation?

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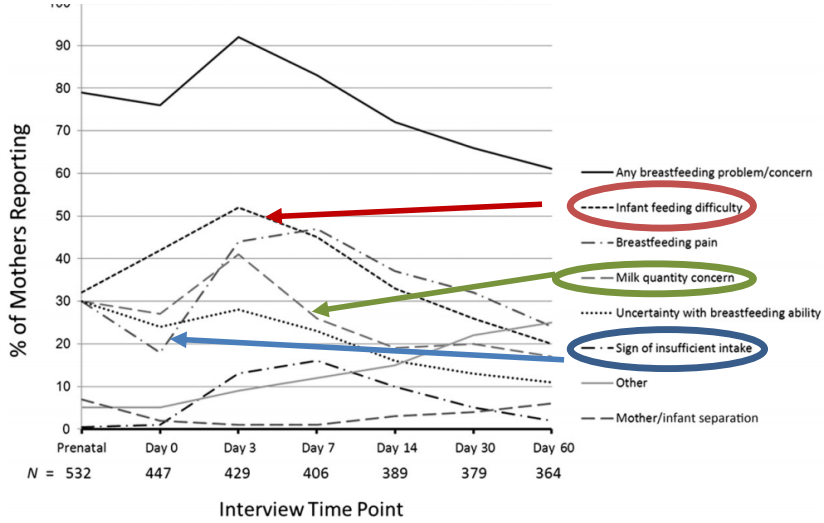
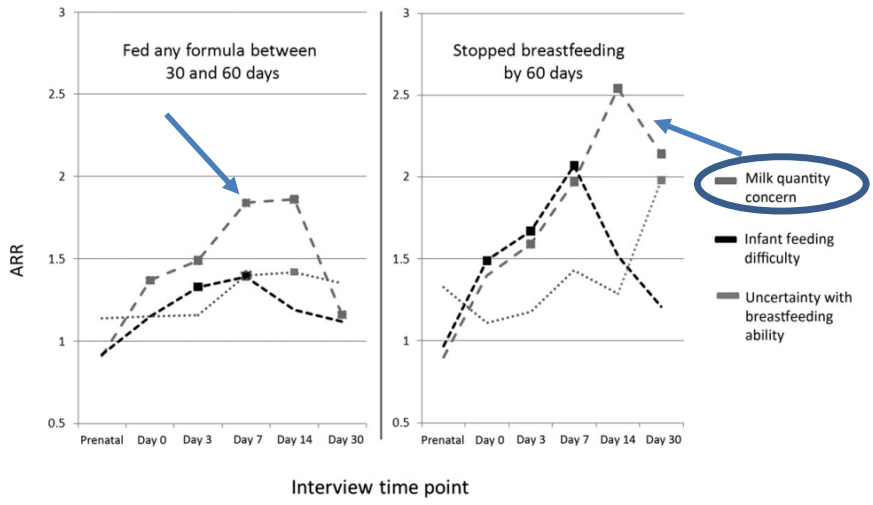


FIGURE 2
Prevalence of maternally reported breastfeeding concerns (main categories) by interview time point. At the prenatal interview, women were asked about their breastfeeding concerns. At each postpartum interview, women who had breastfed or expressed their breast milk since the previous interview were asked to describe any problems or concerns they had (currently or since the previous interview) about feeding their infant. Main categories in legend are presented top to bottom in order of prevalence at the day 3 interview. "Maternal health and medication" and "too much milk" main categories are not shown (prevalence ≤ 2% at any time point). Prevalence results are not adjusted for confounders.

Pediatrics 2013;132e865-3875

26



Concern re milk quantity is the most common reason to stop nursing at 60 days

Pediatrics 2013;132e865-3875

27

Parent's Worry About Milk Production

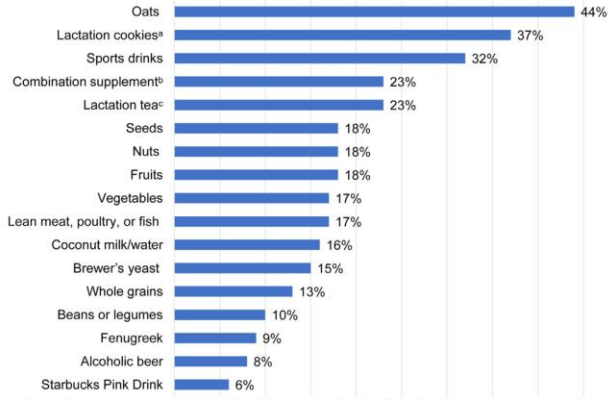


Figure 3. Self-Reported galactagogue use among a sample of US breastfeeding mothers (N = 1,294) recruited via Facebook into a survey study (December 2020 through February 2021). Percentages include mothers who reported currently or previously using the specific galactoguge to increase their breast milk production. The displayed galactaoguges were reportedly used by ≥5% of participants. [a]Lactation cookies, brownies, or treats; homemade and store-bought combined. [b]Supplements that contain multiple herbs. [c]Teas that contain herbs to increase milk supply.

Ryan et al J Acad Nutr Diet. 2023;123(9):1329-1339

28

Examples of Galactagogues Used Around the World

Country / Region	Common Galactagogues (Typical Local Names)	Type
Indonesia	Torbangun (Coleus amboinicus), Fenugreek	Herb / Food
Philippines	Moringa (Moringa oleifera)	Herb / Food
Malaysia	Dates, Green Papaya, Fenugreek, Oats, Ginger	Food / Herb
India	Shatavari (Asparagus racemosus), Fenugreek, Fennel	Herb / Spice
Ghana	Peanut Soup with Bra Leaves (Hibiscus sabdariffa)	Food / Herb
China	Chinese Dates (Jujube), Herbal Soups	Food / Herbal
Peru	Andean Plants, Animal-Based Foods	Food / Herb
Algeria	Wild and Marketed Medicinal Plants	Herbal
Angola	Wild Plants (Multiple Species)	Herbal / Wild Plants
Western Countries	Fenugreek, Fennel, Milk Thistle, Brewer's Yeast, Domperidone	Herbal / Supplement / Pharmaceutical

29

Reassuring Parents

- **Use data to explain to families that early postpartum weight loss is normal before secretory activation.**
- **Recognize that excessive early weight loss (first 24 hours) may be due to IV fluids.**

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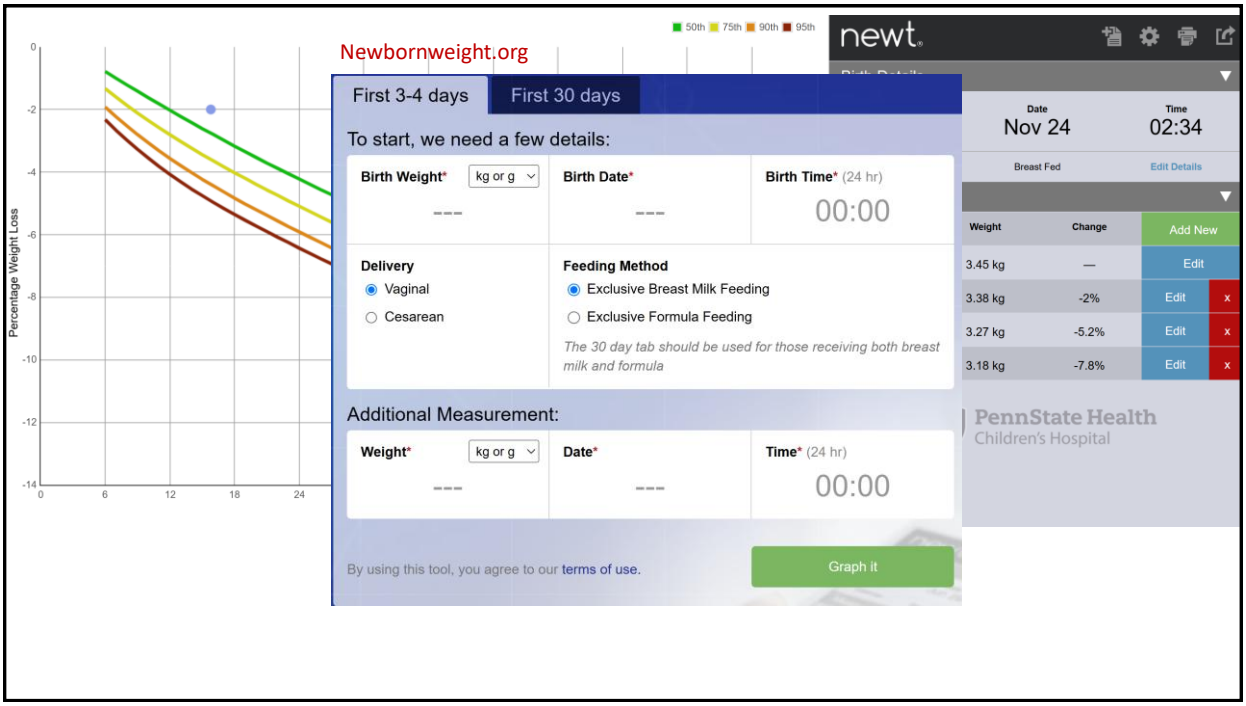


31

Intrapartum Fluids and Newborn Weight Loss Among Bfed Infants

- Retrospective chart review of 150 dyads Jan-July 2016 in France, Marseille maternity Univ Hosp
- Collected info on mother's age, parity, history, drugs/alcohol, BMI at end of preg, pregnancy complications, mode of delivery, labor duration from 3cm, fetal gender, neonatal wts on days 1,2,3, and Apgar's

J Matern Fetal & Neonat Med 2022 Feb;35(4) 692-698

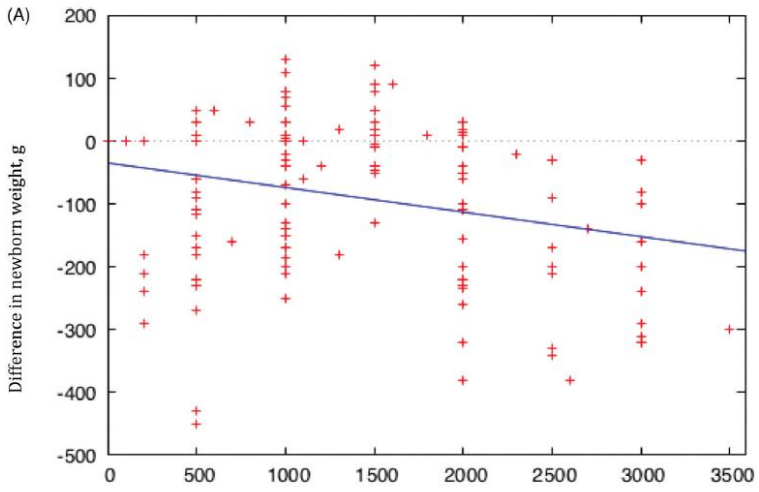
32

Results- Intrapartum Fluids and Newborn Weight Loss

- Average IV fluids during labor = 1280 +/- ml
  - 14% received > 2500 ml
- >2500 ml IV fluids associated with:
  - Epidural analgesia
  - Emergency cesarean
  - Oxytocin given during labor ** (most significant risk factor due to duration of labor)

33

Change in Weight from Birth to Day 3, according to Volume of Maternal Fluids Given



Greater risk of >8% newborn weight loss at 48 hours if mom given 2000ml + IVF

34

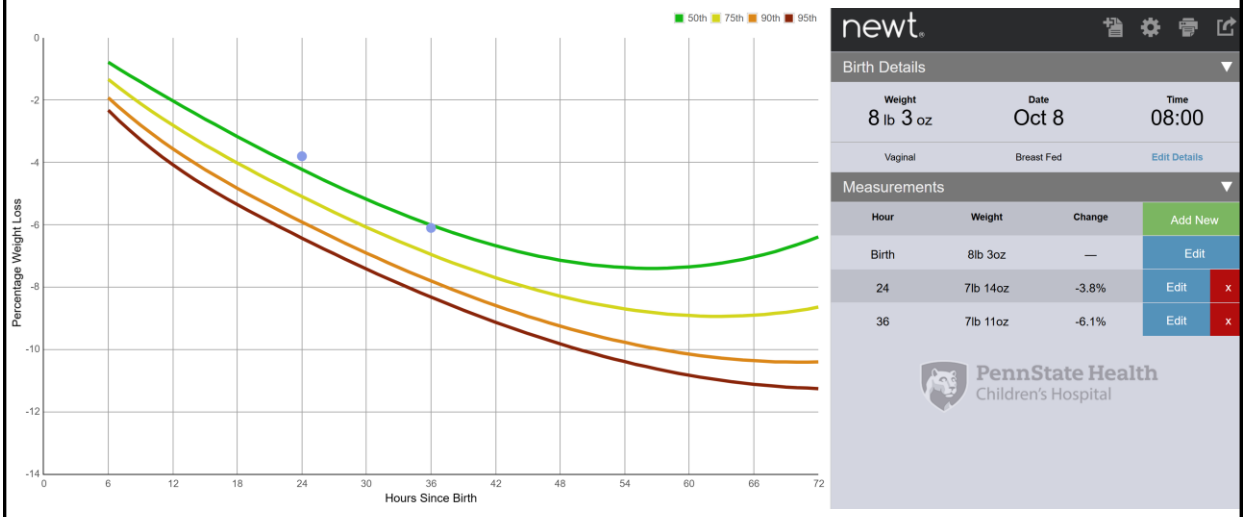
Marta, our 32yo G1P1 mother, gave birth to her son Adam at 38 6/7 weeks gestation, NSVD, BW 8 lb 3 oz, after 20 hours of labor and 3 hours of pushing.

She is now 36 hours post-partum and Adam has been nursing often. He is clustering his feeds, feeding every hour when awake, then sleeping for 2 hours at a time.

Marta feels like she has no milk and wonders if she should supplement her baby.

At 24 hours, the baby's weight was 7 lb 14 oz (3.8% down), and at 36 hours the baby is 7 lb 11 oz (6% down)

35



Adam's Weight Change

36

Adam is a hungry term healthy infant, with normal newborn weight loss. What can we suggest to help Marta?

- Reassure Marta
  - Her baby is strong and a good communicator
  - He is working hard to increase her milk production, this is physiologic
  - Babies often feed 10-20 times/day in the first few days.
  - Low volumes are needed in the first 2 days of life
  - Her colostrum production will increase every 24 hours
  - Rapid increase in milk production occurs around 72 hours for primips
- Feed Adam from both breasts for each feeding
- Try to wake Adam up between breasts, and while breastfeeding
- Breast compressions can help transfer milk to Adam
- Switch nurse
- Hand expression of colostrum after nursing and feed to Adam on a spoon
- Follow Marta and Adam daily to be sure milk is increasing while Adam's weight loss stays within normal limits (under ~10%)
- Skip the visitors and social media, so she can sleep when Adam sleeps

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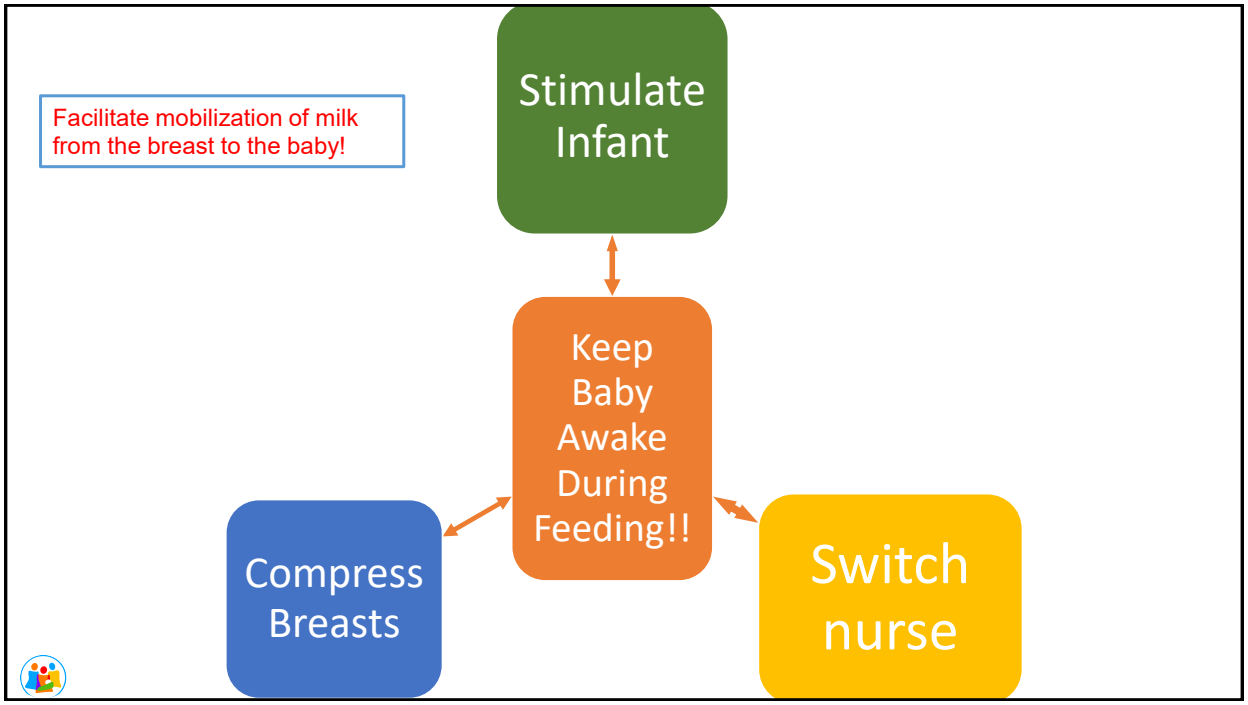

38

Keep Infant Awake- Stimulate While at the Breast

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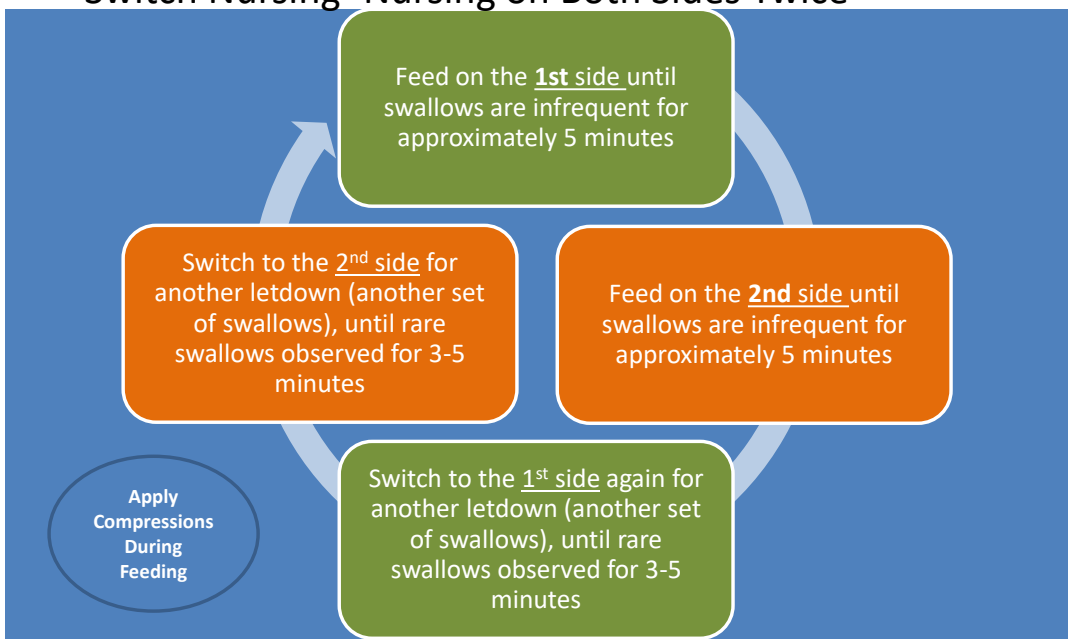
Breast compressions while nursing can help transfer milk to a sleepy infant

40

Switch Nursing- Nursing on Both Sides Twice



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When is Supplementation Indicated?

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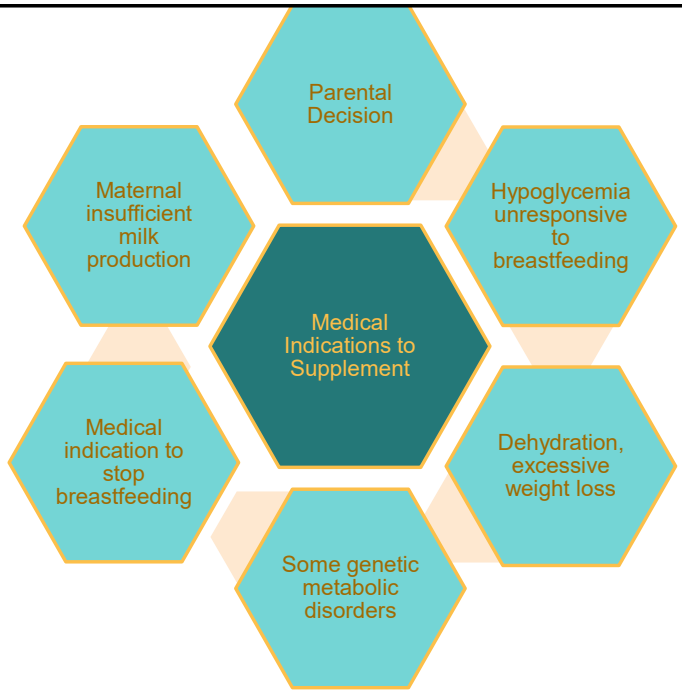


Academy of Breastfeeding Medicine Supplementation Protocol 2017- bfmed.org

43

Table 2. At-Risk Infants for Whom Routine Monitoring of Blood Glucose is Indicated

Maternal conditions
- Pre-existing or gestational diabetes, or abnormal result of glucose tolerance test, especially if poorly controlled
- Pre-eclampsia and pregnancy induced, or essential hypertension
- Previous macrocosmic infants (as a proxy for undiagnosed diabetes in pregnancy)
- Substance abuse
- Treatment with beta-agonist tocolytics
- Treatment with oral hypoglycemic agents
- Late antepartum or intrapartum administration of IV glucose

Neonatal conditions
- Intrauterine growth restriction or marked wasting
- Low birth weight (<2,500 g)
- Small for gestational age; <10th percentile for weight[a]
- Babies with clinically evident wasting of fat and muscle bulk
- LGA; >90th percentile for weight & macrosomic appearance[b]
- Discordant twin; weight 10% < larger twin
- Infants of poorly controlled diabetic mothers
- Prematurity (<35 weeks or late preterm infants with clinical signs or extremely poor feeding)
- Perinatal stress; severe acidosis or hypoxia–ischemia
- Cold stress
- Polycythemia (venous hematocrit >70%)/hyperviscosity
- Erythroblastosis fetalis
- Beckwith–Wiedemann syndrome
- Microphallus or midline defect (indicating an underlying endocrine condition)
- Suspected infection
- Respiratory distress
- Known or suspected inborn errors of metabolism or endocrine disorders
- Any infant admitted to the neonatal intensive care unit
- Infants displaying signs associated with hypoglycemia

Perform newborn blood sugar screening for at-risk infants only

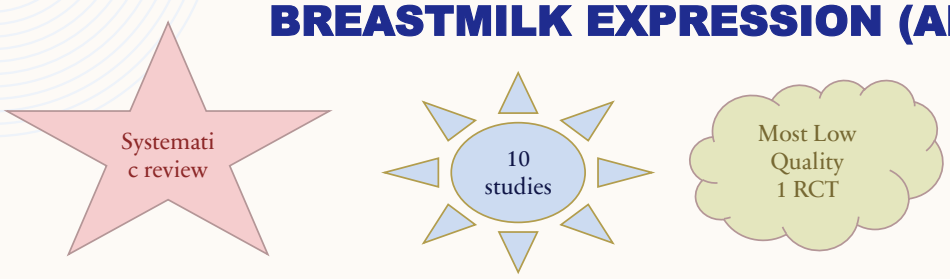
Screening all infants increases the risk of unnecessary supplementation

Wight et al ABM Clinical Protocol #1 Hypoglycemia 2021- bfmed.org

44

SYSTEMATIC REVIEW OF ANTENATAL BREASTMILK EXPRESSION (ABME)

45



- Most people expressed around 36-37 weeks gest
- The only RCT had women hand expressing twice a day for no more than 10 min among pregnant women with gest DM who were low risk; average vol = 5 ml total for the entire prenatal time (DAME study)
- 5 studies reported that women engaged in ABME had greater confidence and were more committed to bfeeding
- In the RCT, infants of women who did ABME were given less formula than those who did not do ABME
- Some women reported feeling a sense of failure, guilt, anxiety if they could not express much colostrum
- Antenatal colostrum expression has been shown to **not** increase milk production or hasten secretory activation

Sobik et al Bfeeding Med 18(2) 2023 p. 107-115

45

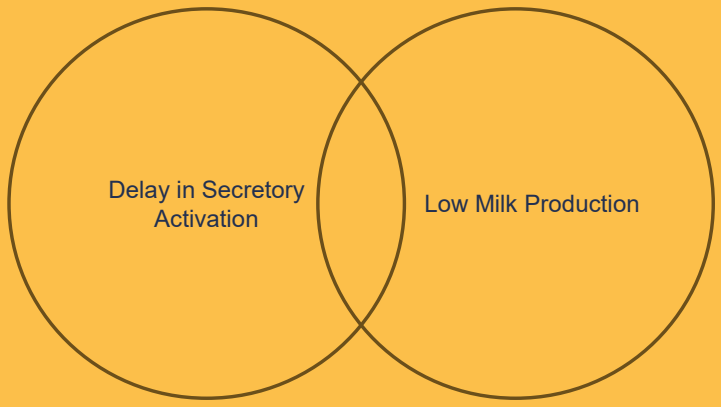
Hyperbilirubinemia and Breastfeeding

'*The risks to the establishment of breastfeeding and milk supply, including potential health consequences to the infant and mother unrelated to jaundice, must be weighed against any benefit of introducing infant formula supplementation for bilirubin reduction. Use of intravenous fluids is not recommended unless there is evidence of dehydration that cannot be corrected enterally or if the TSB exceeds the escalation of care threshold. The potential use of supplemental formula, mother's expressed milk, or donor human milk may be considered as an alternative to readmission for phototherapy in the breastfed infant who has been discharged and presents with excess weight loss, a maternal history consistent with a diagnosis of suboptimal intake hyperbilirubinemia, and a bilirubin concentration approaching or at the phototherapy threshold.*'

Kemper et al AAP Hyperbili Clinical Practice Guideline Pediatrics. 2022;150(3):e2022058859

46

Insufficient Maternal Milk Production

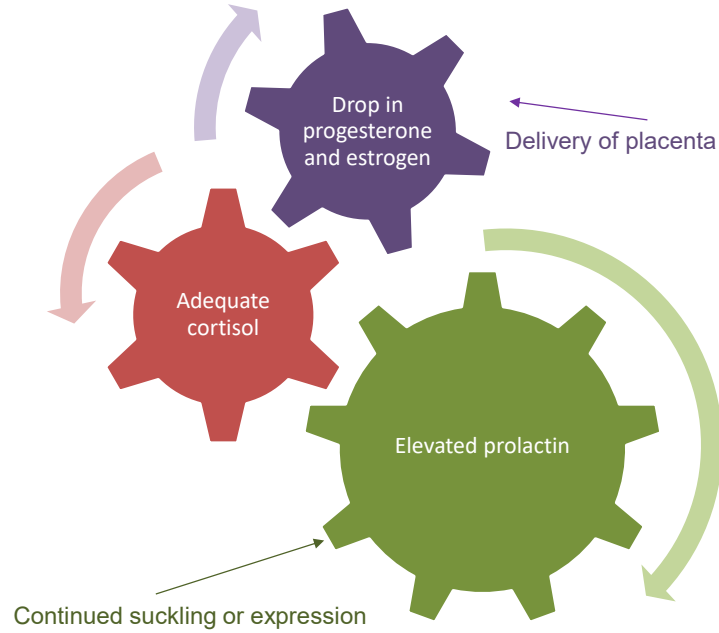


47

Secretory Activation

(Lactogenesis II, milk coming in)

48



49

Hannon et Nature Reviews Endo 19, 46-61, 2023

Table 2 | **Human genetic and acquired endocrine lactation disorders**

Disorder	Effect on lactation	Associated endocrine abnormalities	Refs.
Genetic			
Germline heterozygous *PRL* mutation	Absent lactation	↓ Prolactin secretion	153
Germline heterozygous or compound heterozygous *PRLR* mutation	Increased or decreased lactation	↑ Prolactin secretion, ↓ prolactin receptor signalling	155,156
Acquired			
Autoantibodies against pituitary lactotroph cells	Absent lactation	↓ Prolactin secretion	152
Pituitary insufficiency, for example, Sheehan syndrome	Absent or delayed onset	↓ Multiple pituitary hormones	159
Type 1 diabetes mellitus	Delayed onset	↓ Insulin	168
Hypothyroidism	Lactation insufficiency	↓ T_3, T_4	169
Polycystic ovary syndrome	Delayed onset and/or lactation insufficiency due to lack of prenatal breast enlargement	↑ Androgens, obesity-related endocrine abnormalities (see the obesity row)	160,161
Obesity	Delayed onset	↓ Mammary responsiveness to prolactin	166,167
Antenatal glucocorticoid treatment	Transient secretory activation during pregnancy	↑ Glucocorticoid exposure during pregnancy	172
Caesarean section	Delayed onset	↓ Pulsatility of oxytocin secretion, ↓ prolactin secretion	174
Preterm birth	Delayed onset	Potentially reduced exposure to pregnancy-associated hormones	165
Retained placental fragments	Absent or delayed onset	↑ Progesterone	175
Exposure to EDCs	Reduced breastfeeding duration	Oestrogenic effects; potential effects on prolactin secretion or action	188–192

Up arrow denotes increased; down arrow denotes decreased. EDCs, endocrine-disrupting chemicals.

50

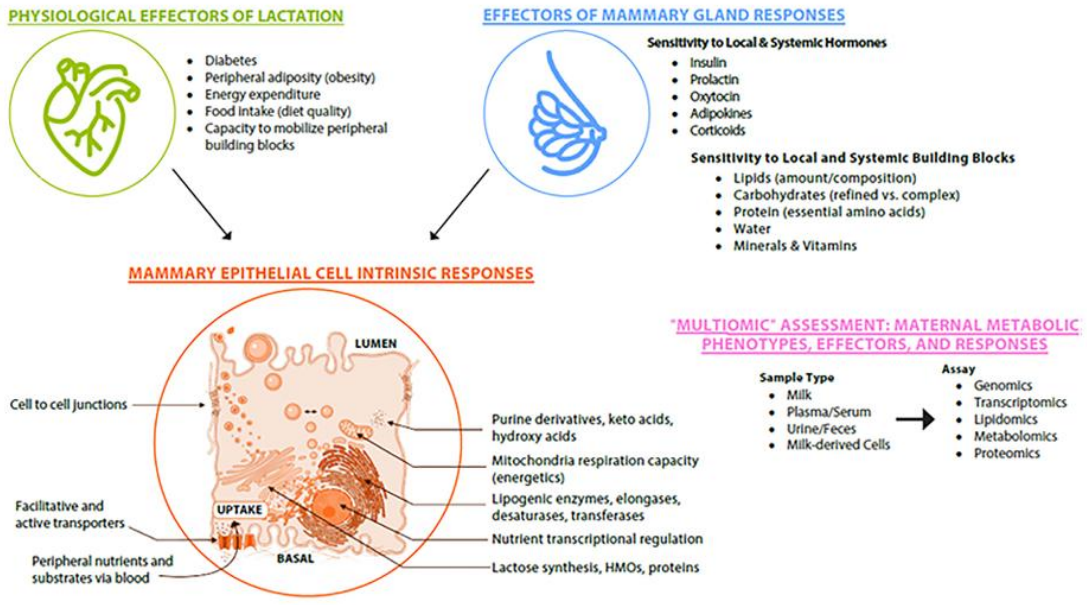


FIGURE 5. Metabolic status and adaptation for lactation: impacts on mammary epithelial cell (MEC) metabolism and identification using "multiomic" dicators of human milk, milk fat globules, and MECs. *HMO, human milk oligosaccharide.*

Neville Am J Clin Nutr 117 (2023)S11-S27

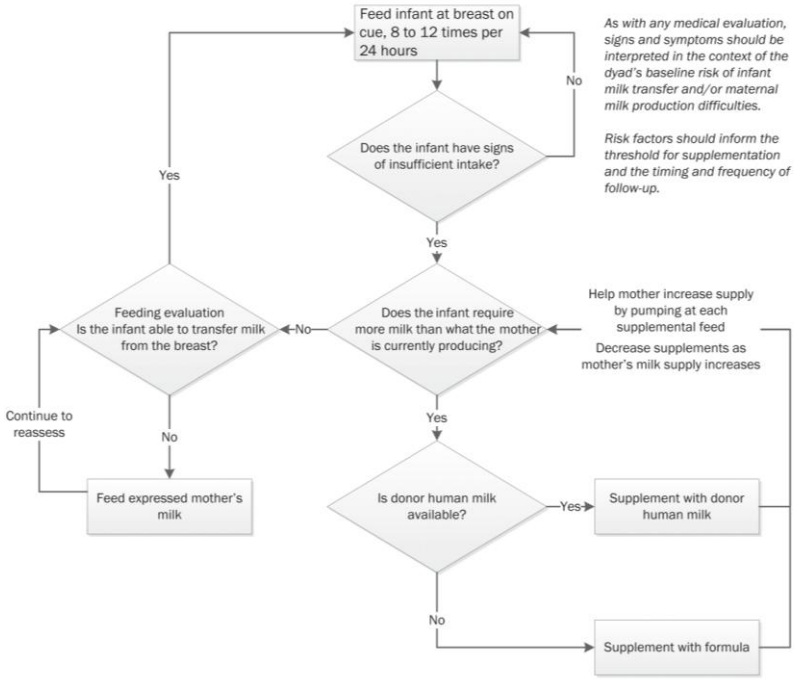
51

Delayed Secretory Activation Management

- Rule out lack of milk transfer as the cause of 10%+ weight loss or lack of weight gain!
- Supplement by ~10% weight loss if production is not sufficient yet
- Nurse the baby first
  - Express milk immediately after nursing
  - Supplement with expressed BM, + donor milk, or formula
- Explain to parents:
  - importance of consistent milk removal when supplementing
  - Milk production typically increases gradually over time
- Close followup

52

52



Feldman-Winter et al
Pediatrics 145(4) April 2020
e20183696

53

Low Milk Production Early Postpartum Unrelated to Delay in Secretory Activation

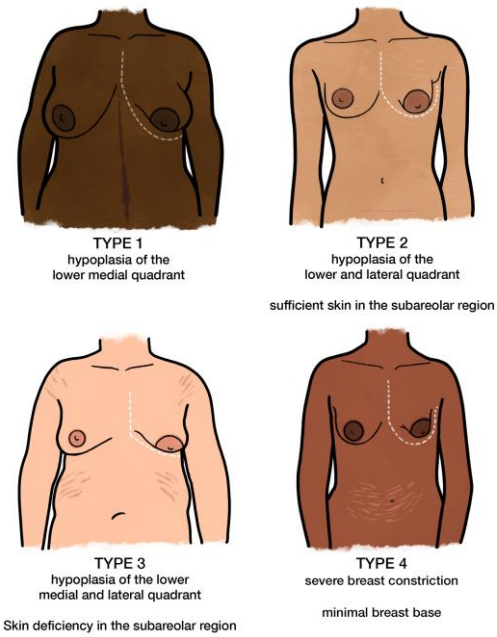
Insufficient breast development
- Low glandular tissue
- Breast surgery (reduction)
- Medication effect

Metabolic Health
- Insulin resistance or type 2 diabetes
- Chronic hypertension
- Elevated BMI

Peripartum Event
- Retained placenta
- Pituitary defect/low PRL
- Medications
- Thyroid disease
- Elevated testosterone

54

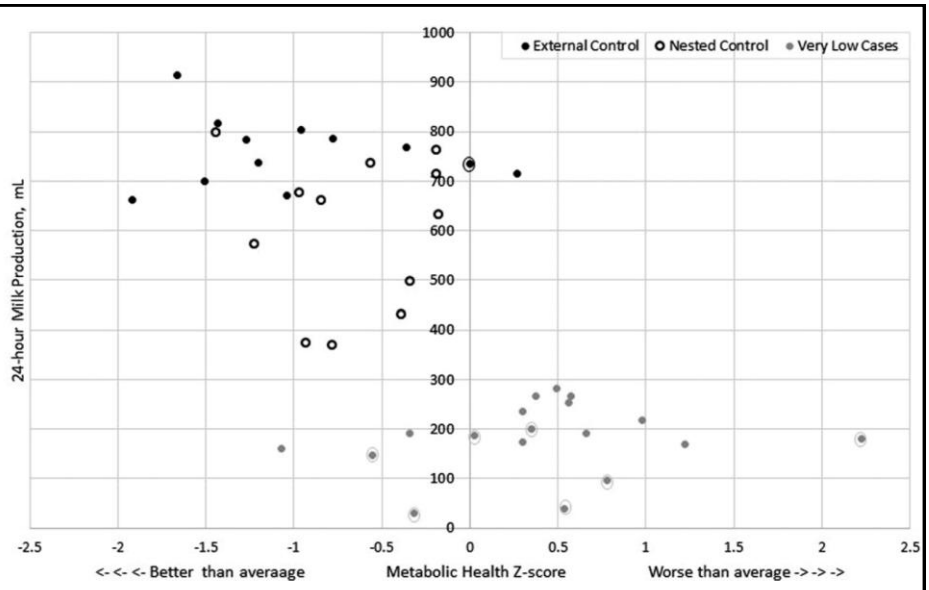
Breast hypoplasia as a cause of low glandular tissue, underlying low milk production



55

Nommsen-Rivers et al Breastfeeding Med 2022 Jul; 17(7)

Metabolic score includes:
Fasting glu
Fasting insulin
Fasting c-peptide
Plasma TG
Cholesterol panel
BP
Waist circumference



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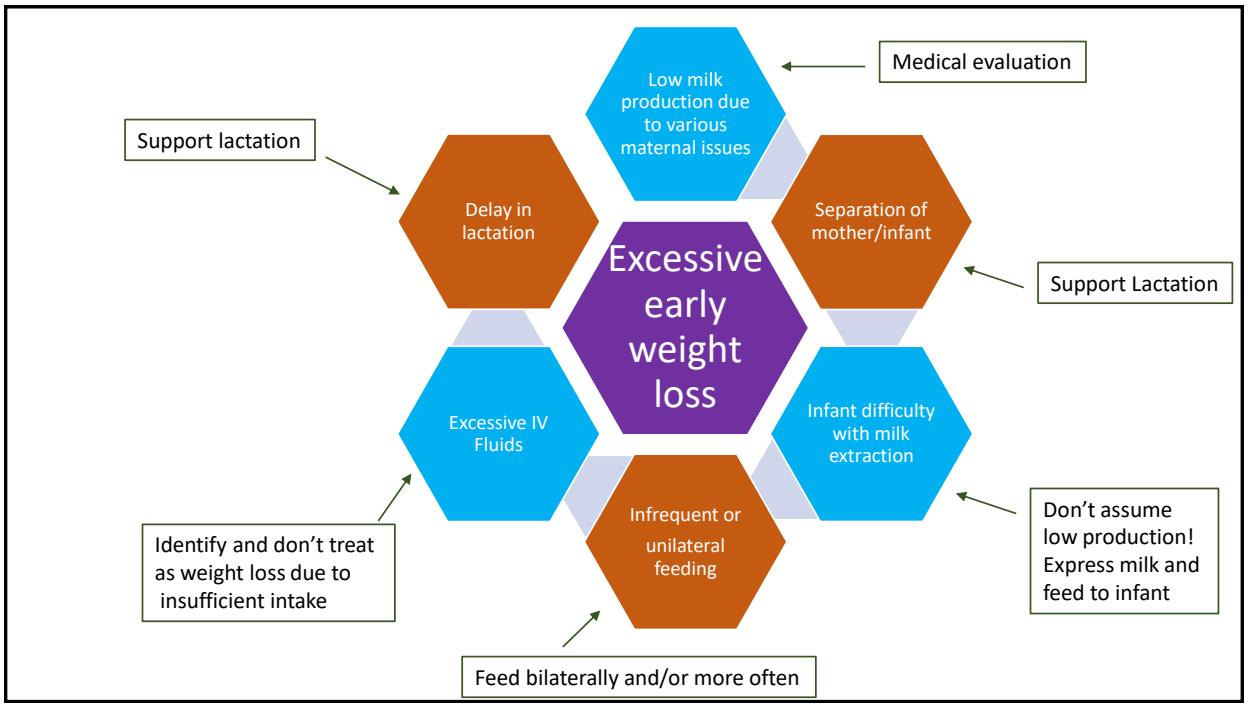

57

Conclusions

1. Support lactation by following Baby Friendly Hospital Initiative Steps, as they are evidence based.
2. Use medical indications for supplementation.
3. Educate families that babies are eating machines, and follow weights as objective measures when deciding on supplementation
4. Support lactation if a baby needs supplementation with regular and effective milk removal, along with counseling and close follow up. In most cases, production will gradually increase.
5. Not all mothers can make sufficient milk- recognize risk factors and follow dyad closely. Their milk production typically rises slowly over time.

58