



Cooper Medical School  
of Rowan University

CHAMPS

# How to Write a Supplementation Policy

Presented by

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May 13, 2015

CHAMPS WEDNESDAY WEBINAR SERIES

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# Updates from CHAMPS...

- 20 hospitals now enrolled!
- 5 new applications (4 MS hospitals)
- 33 community transformers trained in Mississippi and New Orleans
- 5 Breastfeeding clubs
- Participated in several health fairs and conferences

# Upcoming CHAMPS training opportunities!

- 5 hour “hands on” Train the Trainer course
  - Memphis – May 19; Jackson – May 21
  - Details on the CHAMPS website
  - Free to CHAMPS hospital clinicians ONLY
  - Emily Taylor and Kim Bugg trainers
- 3 Day Course: 15-hr Didactic Training Requirement
  - West Jefferson Medical Center, Marrero, LA- Oct. 27-29
  - Free to CHAMPS hospital clinicians ONLY
  - Taught by Nikki Lee, RN, BSN, MS IBCLC, CCE, CIMI

# Mississippi hospitals

- Greenwood LeFlore
- Merit River Region
- Ochsner Hancock
- UMC
- S Sunflower County
- Tupelo/NMMC
- Woman's
- 4 new hospitals have applied as well!

# Greater New Orleans hospitals

- West Jefferson
- Touro
- Ochsner Baptist
- Ochsner Kenner
- Ochsner North Shore
- Ochsner St Anne's
- Ochsner West Bank



Louisiana WIC training  
April 2015

# Texas hospitals

- University (San Antonio)
- CHRISTUS New Braunfels
- CHRISTUS Westover Hills
- CHRISTUS Children's San Antonio

# S Tennessee Hospitals

- Regional One
- St Francis-Bartlett
- Upcoming Event
  - Shelby County Breastfeeding Coalition Meeting with CHAMPS, May 20, 8-11:30am

# Save the CHAMPS dates

- CHAMPS hospitals and community conferences/learning sessions
  - CHAMPS NOLA/LA and Texas  
Oct 20 and 21, NOLA
  - CHAMPS MS and S Tennessee  
Nov 12, Jackson



# Objectives: How to Write a Supplementation Policy

1. Identify The Joint Commissions Exceptions to the Core Measure of Exclusive Breast Milk Feeding
2. Develop an approach to supplementation that protects continued breastfeeding
3. Manage common problems such as weight loss, hyperbilirubinemia and hypoglycemia

# The Joint Commission PC-05 Mandate

## Benchmark

### Improving Performance on Perinatal Care Measures

Quality improvements in essential areas of patient safety, including perinatal care, rely on the performance of specific tasks. To help assess the effectiveness of patient care, The Joint Commission requires hospitals to submit data reports based on measures that meet certain criteria. These accountability measures are organized into “measure sets,” which are a unique group of action items specifically selected to optimize the care provided in each area.

Currently, general medical/surgical hospitals are required to submit data for a minimum of 4 measure sets (out of 14) via a vendor that has been evaluated and listed by The Joint Commission. This will change, however, in 2014. Beginning January 1, hospitals must submit data for 6 measure sets. According to the new guidelines, some of these sets will be mandatory for hospitals. Others will be discretionary. A number of health care organizations that are involved in perinatal care supported adoption of the measure (see the box on page 18).

Perinatal care will fall under the mandatory column for hospitals with 1,100 or more births annually. The Joint



*Beginning January 1, 2014, hospitals that see more than 1,100 births annually will be required to submit data on the Perinatal Care Measure Set.*

- PC-03 Antenatal steroids
- PC-04 Health care–associated bloodstream infections in newborns
- PC-05 Exclusive breast milk feeding
- PC-05a Exclusive breast milk feeding considering mother’s choice

# A New Core Measure Set

The PC Core Measure Set comprises 5 main measures:

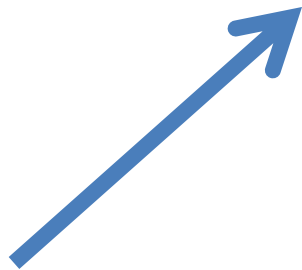
PC-01: Elective delivery

PC-02: Cesarean section

PC-03: Antenatal steroids

PC-04: Health care associated bloodstream infections in newborns

PC-05: Exclusive breast milk feeding



# Mandatory in January 2014

## PC-05 and PC-05a

- TJC defines exclusive breast milk feeding as newborn receiving only breast milk and no other liquids or solids except for drops or syrups consisting of vitamins, mineral, or medicines.
- Breast milk feeding includes expressed mother's milk as well as donor human milk, both of which may be fed to the infant by means other than suckling at the breast.

# BFHI STEP 6

Give newborn breastfed infants no food or drink other than breast milk, unless medically indicated.

- Understand physiology and define medical indications to supplement
- Determine if nurse and/or physician needs to order supplements with formula
- Revise protocols

# BF USA P6a: The process for supporting mothers who request breast milk substitutes has been addressed. Including:

- Exploring and addressing the mother's concern(s)
- Educating the mother regarding the negative consequences of feeding infants breast milk substitutes
- Documentation of the education

# Examples of Text P6a

## MATERNAL REQUEST FOR SUPPLEMENTATION

- Standardize education about the risks of supplementation
  - Mothers will be supported to exclusively breastfeed and educated about the risks of supplementation, however if a mother requests that her breastfeeding newborn receive formula staff will:
    - explore reasons for this request and address mothers concerns
    - educate the mothers about the negative consequences of feeding infant formula
    - document the education that has been provided in addition to documentation stipulated below.

# Risks of Supplementation

- Effects on Mom
  - Decreases confidence
  - Decreases milk removal leading to increased autocrine control and decreased milk synthesis
  - Leads to premature weaning
- Effects on Baby
  - Increases risk of short and long term disease
  - Changes microbiology and immuno-biology of gut
- Effects on Dyad
  - Interferes with effective latch
  - Decreases hormonal stimulation via afferent nerve receptors



# Documentation of Education

- All supplemental feedings will be documented in the infant's medical record and include:
  - the need for supplementation
  - the initiation of the supplementation order
  - parental education and discussion
  - medical indication or reason for supplementation
  - type of supplementation
  - method of providing the supplementation
  - Volume given

# BF USA 6b: Medical indications for supplementation with breastmilk substitutes has been addressed

- Indicate acceptable reasons to supplement
  - Address acceptable weight loss
  - Address hypoglycemia
  - Address hyperbilirubinemia

# Medical Indications: Text for P6b

- Does weight loss indicate dehydration or need for supplementation?
- What are the implications of no void in 24 hours?
- What if the baby has not latched in XX number of hours?
- What if the LATCH scores are <7?

# Weight Loss in an Inner City Baby-Friendly Hospital

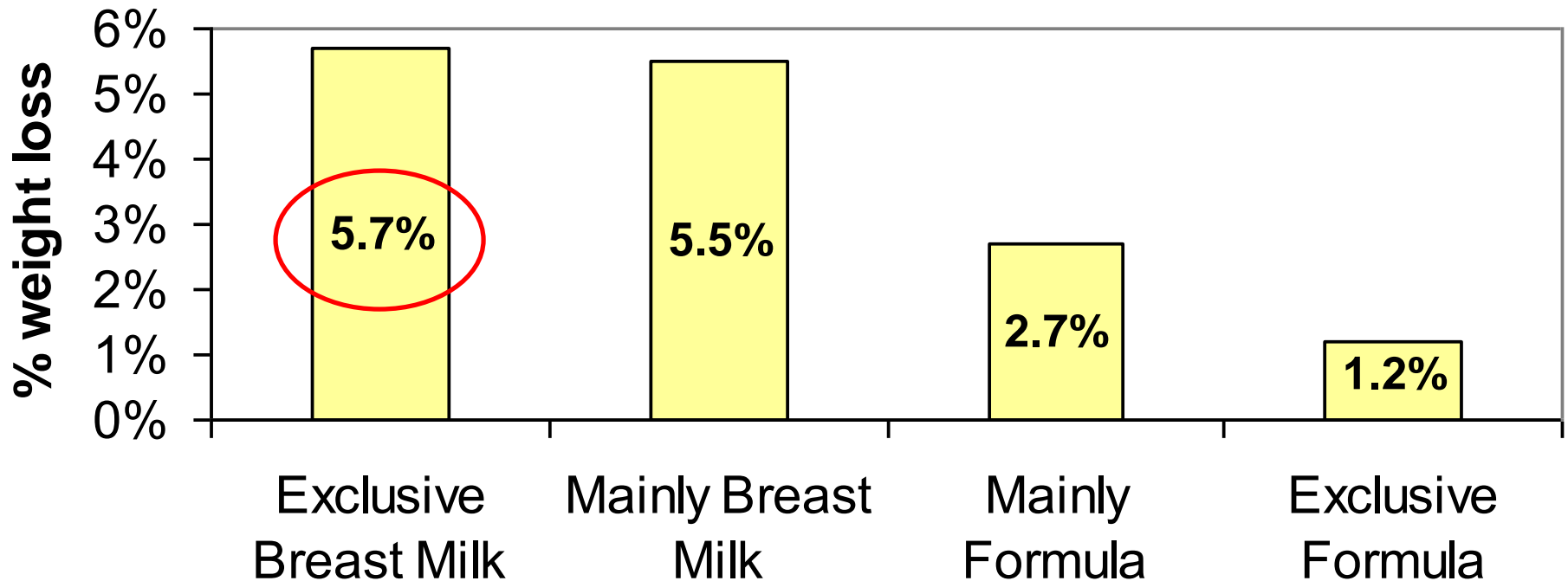
- Average infant weight loss: 4.9%  
(range 0.00%-9.9%)
- Weight loss >7%  
20% (23/118)
- Weight loss >8%  
7% (8/118)
- Weight loss >10%  
0 infants



Grossman X, Feldman-Winter, L, Merewood A. *J Amer Nutrit and Diet.* Mar 2012

# Results by Feeding

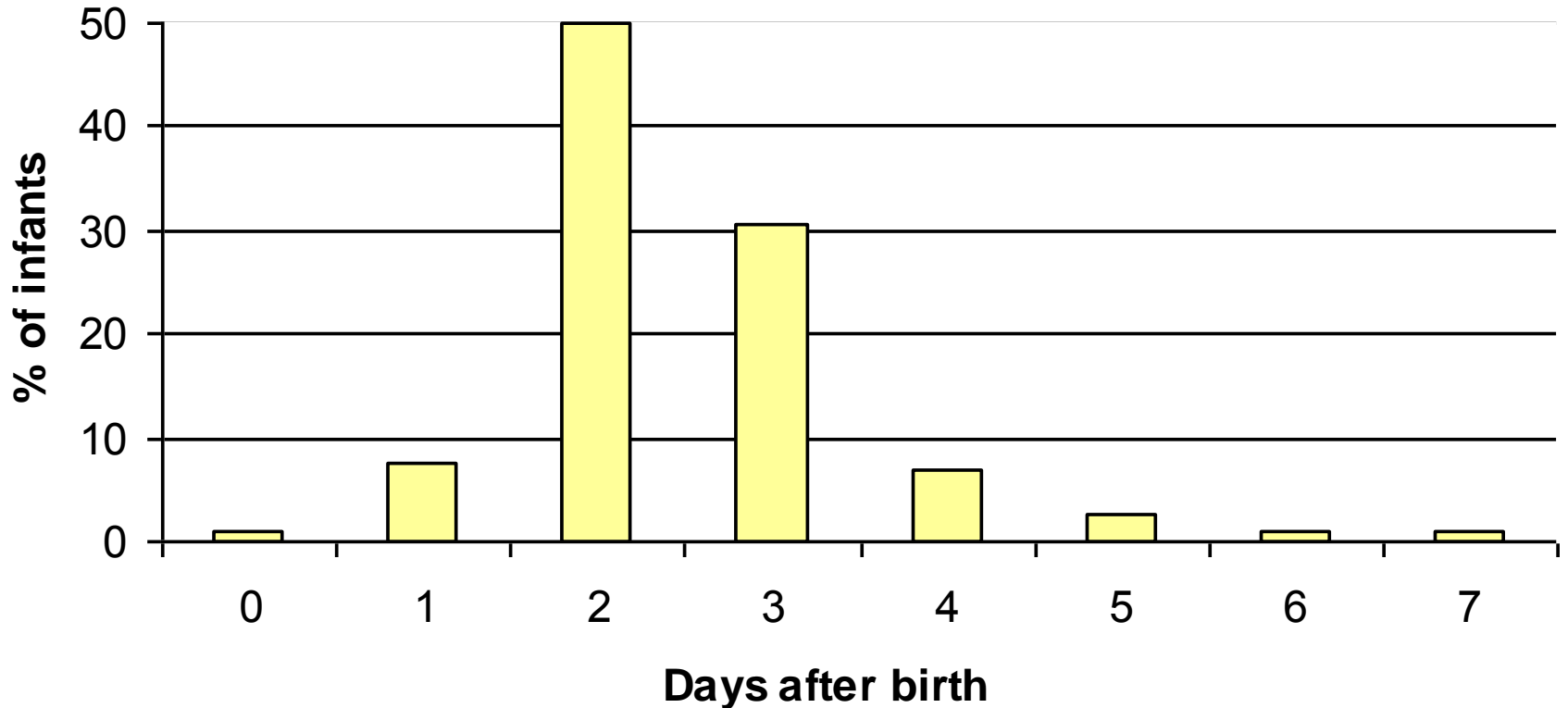
**% Weight loss nadir by feeding category**



Infant weight loss nadir was significantly associated with feeding category ( $p=0.00$ )

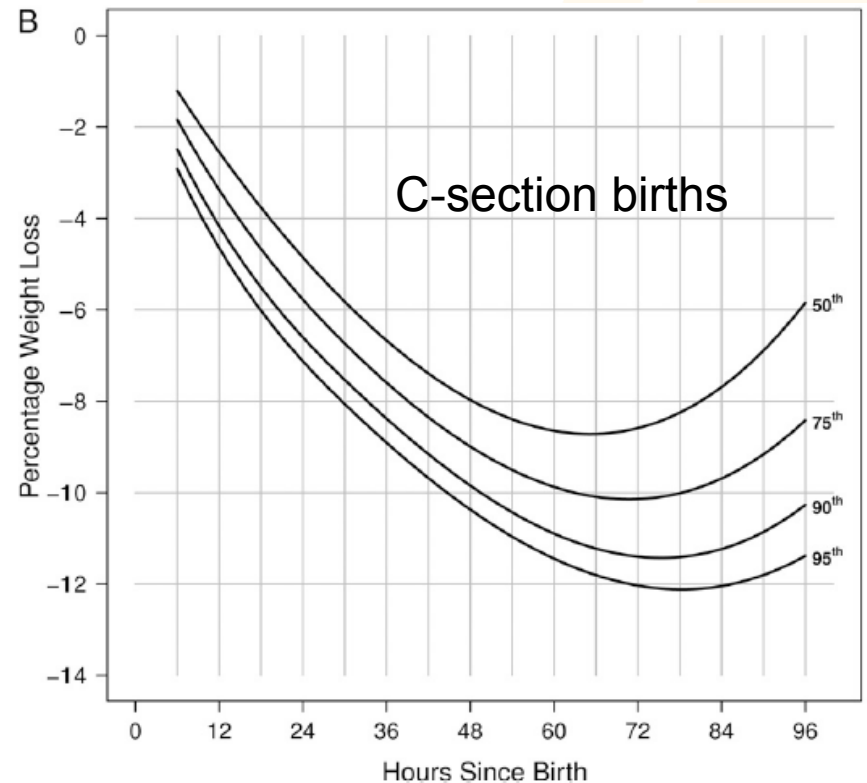
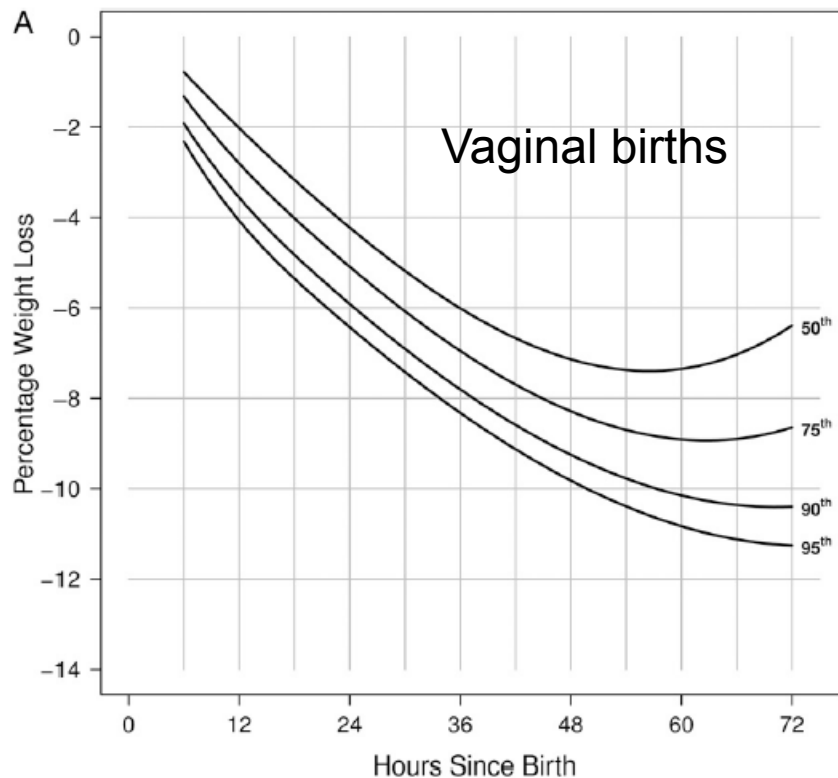
Grossman X, Feldman-Winter, L, Merewood A. *J Amer Nutrit and Diet.* Mar 2012

## Days after birth when weight loss nadir reached



58.5% reached weight loss nadir by 2 days after birth

# What about the new weight loss nomograms?



Flaherman V. et al Pediatrics 135:2015

# Bottom Line on Weight Loss

- One cannot use weight loss alone to indicate supplementation
- Must use clinical assessment, including breastfeeding, milk transfer, LATCH (or Mother-Baby assessment score- Mulford C)
- 6-7 % is the mean, may be less in more Baby-Friendly environments
- 10% is probably excessive if there is no other reason (lots of IV fluid at time of delivery, C-section, no latch or suckling in first few days)



# Over-feeding in early life

- Exclusive breastfeeding:
  - 15-30cc day 1
  - 30-150cc day 2
- Exclusive formula feeding:
  - 60-90 cc every 2 to 3 hours each day; approx 24 ounces (720cc)



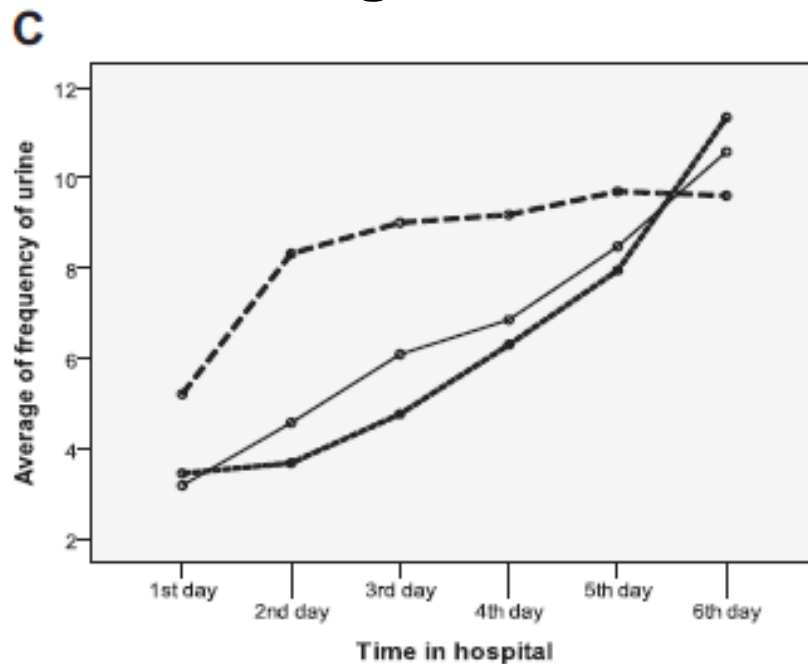
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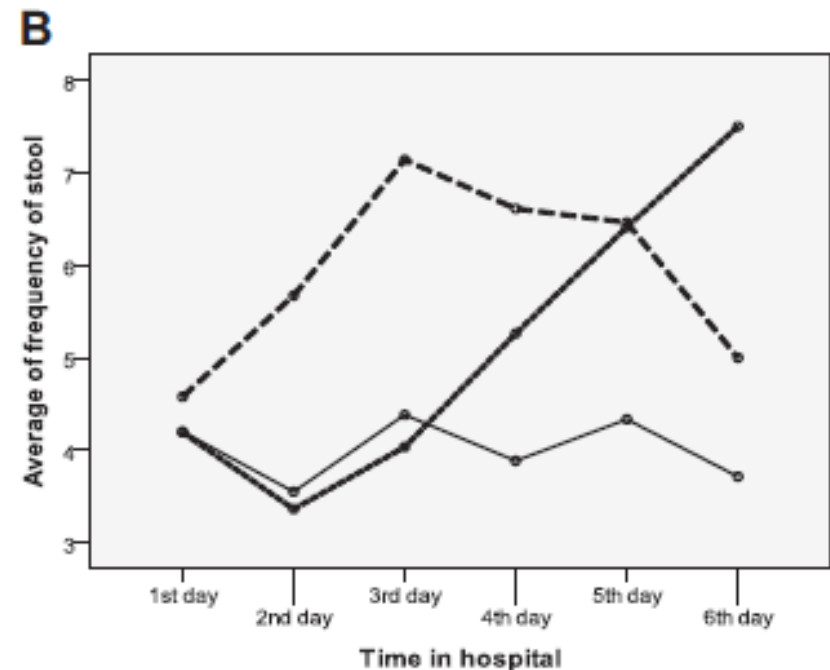
# What is normal volume I/O's?

- Intake on DOL #1 5-10 cc per feed (15-30 total)
- Intake on DOL #2-3 5-30 cc per feed (150-300)

## Voids greater in FF



## Stools greater in FF

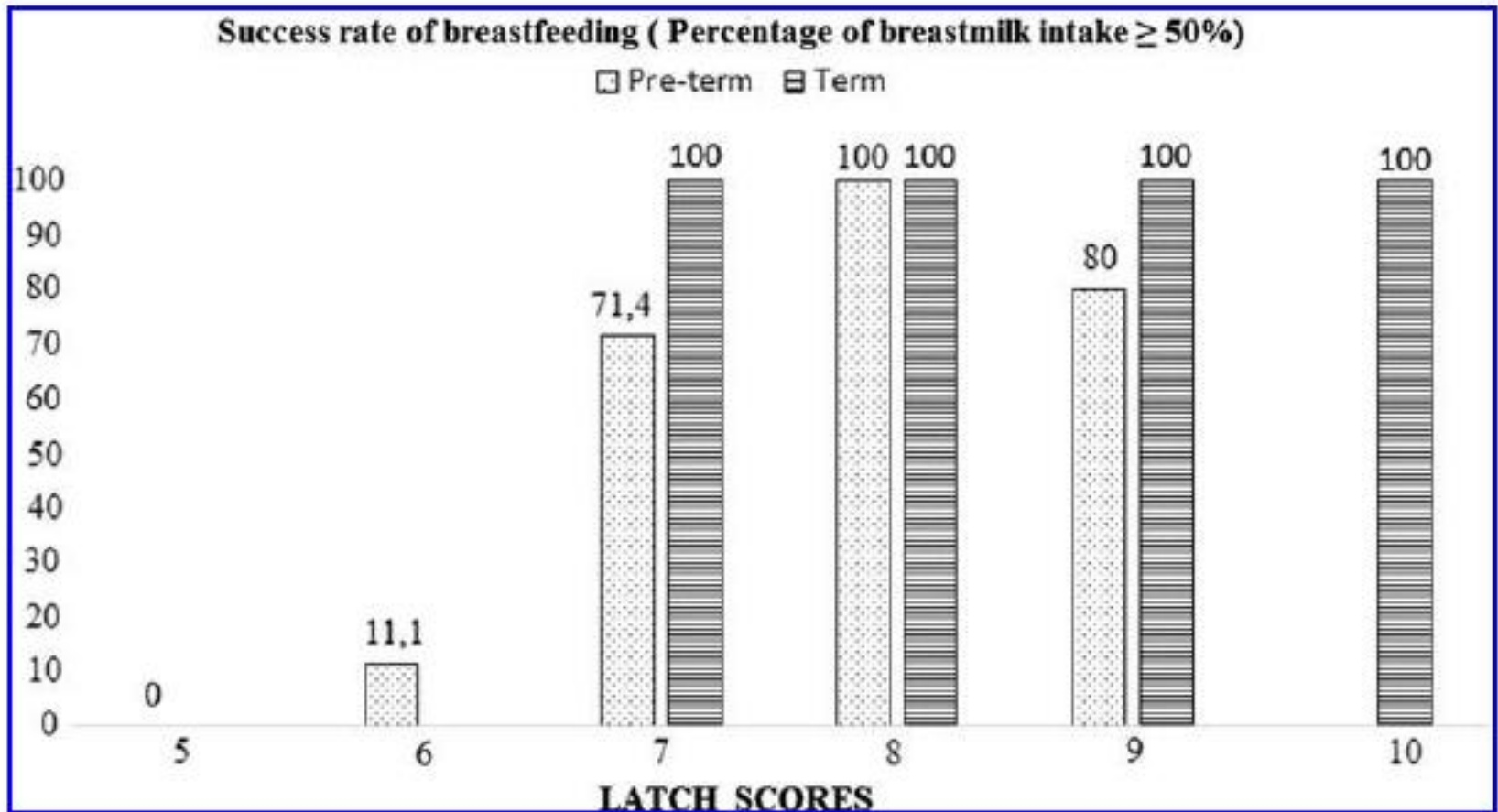


Chen CF et al. Pediatrics & Neonatology 2011

# What If Baby Has Not Latched in First 24 hours?

- Skin to skin facilitates early suckling, delay in skin to skin will make latch more difficult
- Decreased suckling will make jaundice more likely (described later)
- DOL #1 may be essentially NPO as long as suckling
- Use hand expression (pumping) and feed MOM

# What if the LATCH is < 7?



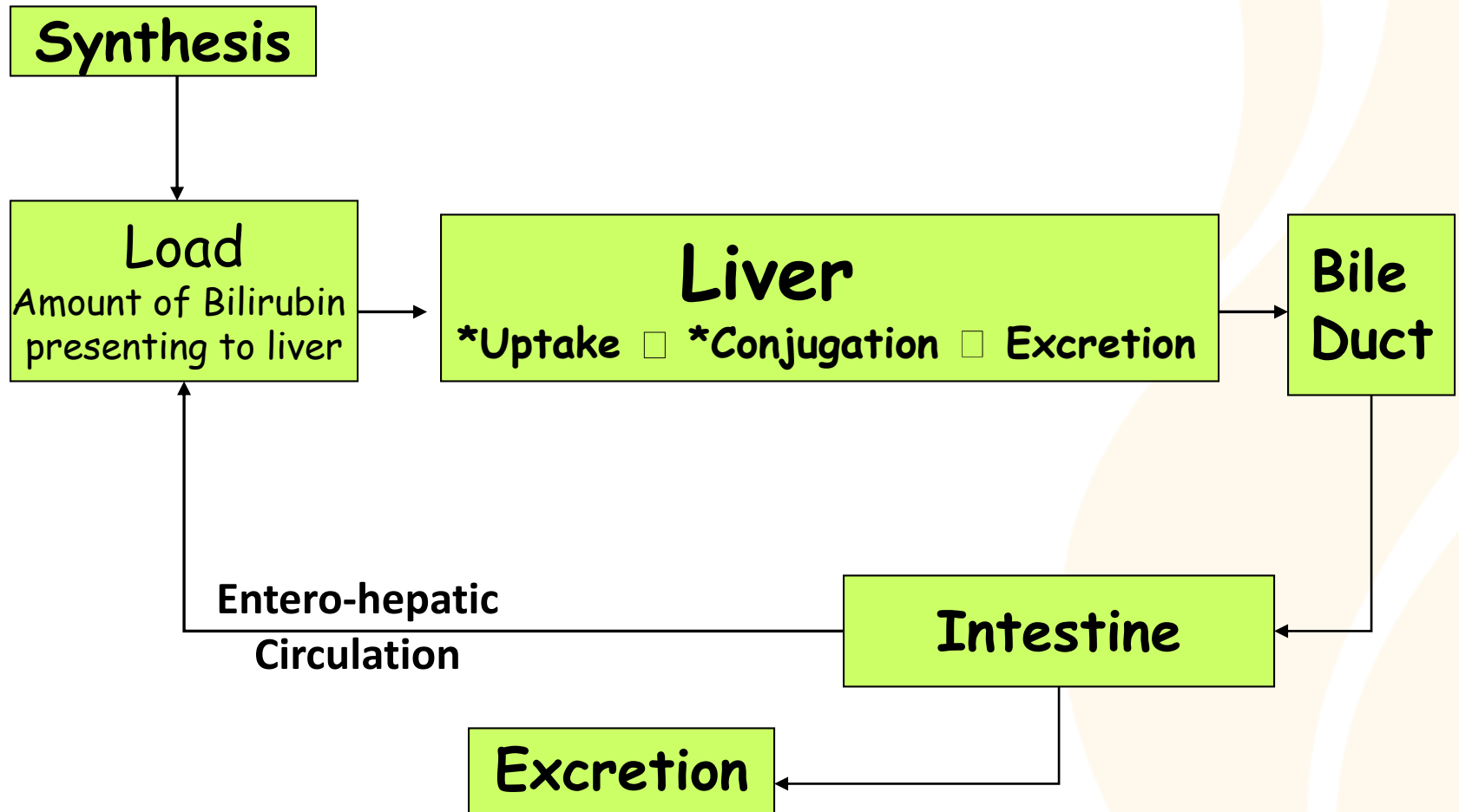
Altuntas N et al Breastfeeding Medicine 2015

# What about jaundice?

## Why do breastfeeding infants become jaundiced?

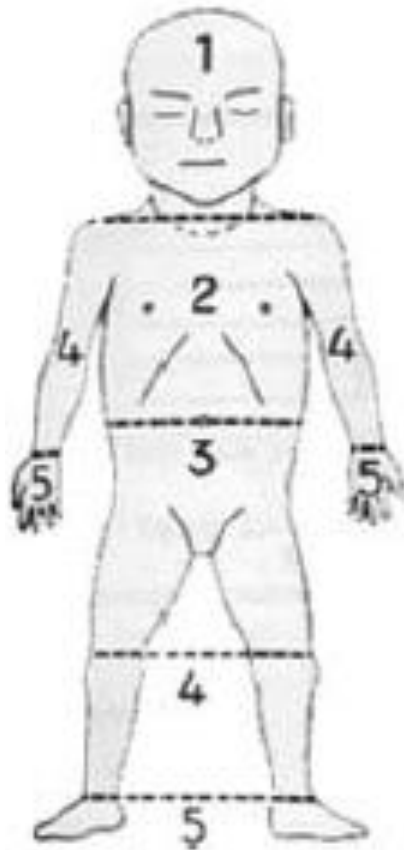
- Breastfed infants have prolonged period of physiologic jaundice
- Difficulties establishing breastfeeding will increase the likelihood of hyperbilirubinemia, not physiologic
- “starvation jaundice”
- Distinguish between early non-breastfeeding jaundice vs. breast milk jaundice

# Bilirubin Metabolism & Transport



Dixit and Gartner, Contemporary Pediatrics, April 1999.

# Not Reliable!

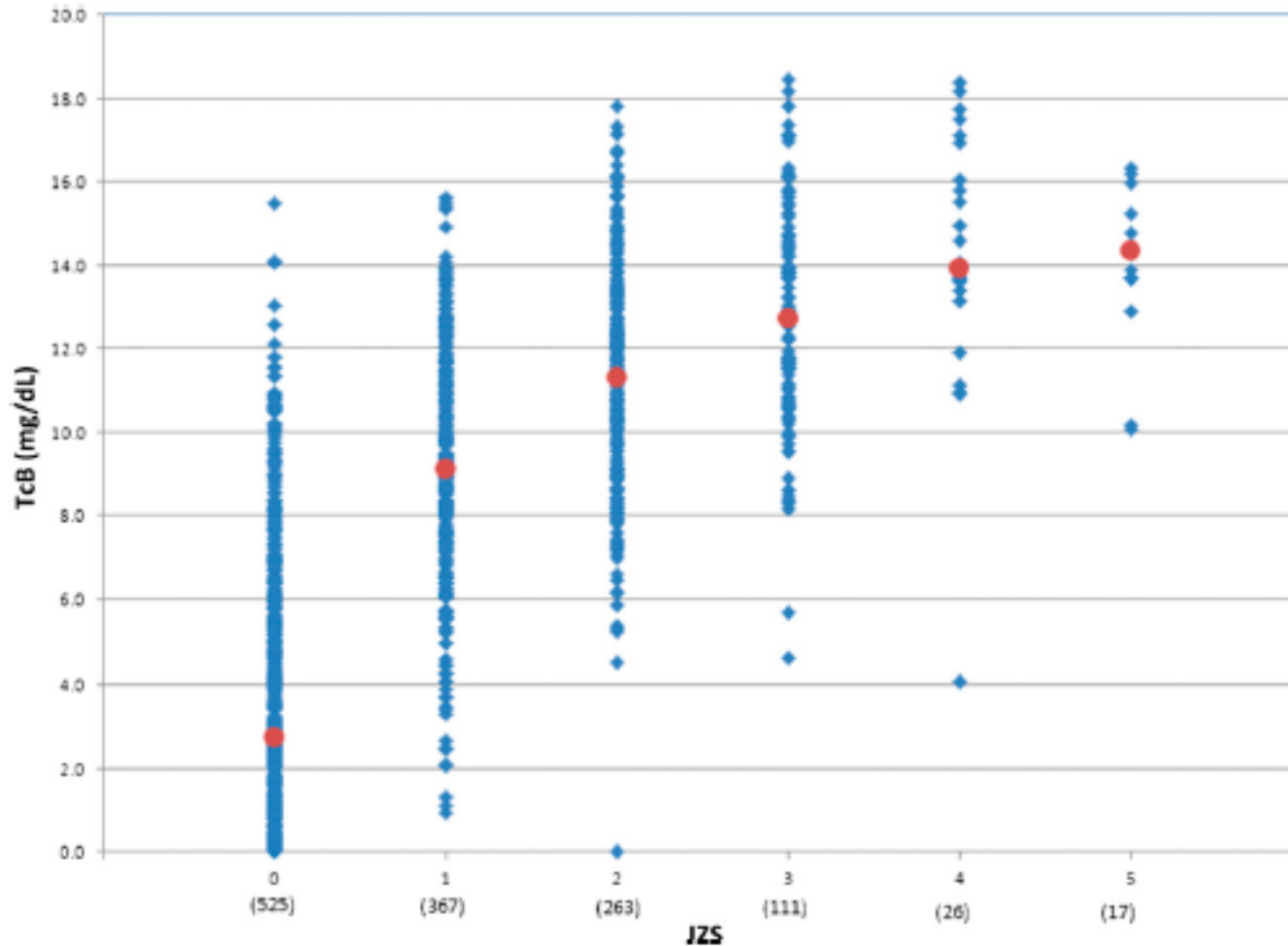


Assess and Track Progression of Newborn Jaundice

Date:		Time:		Age (hrs)	
Dermal Zone	Intensity		TcB mg/dL	Risk status	
	Mild (lemon)	Deep (orange)			
1				Low	
2				Intermediate	
3					
4				High	
5					

Modified Kramer Scale for visual assessment

# Correlation of Jaundice Zone Score



R=0.722  
P=0.000

Maisels J. Pediatrics July 2014



**You need to ask two questions:**

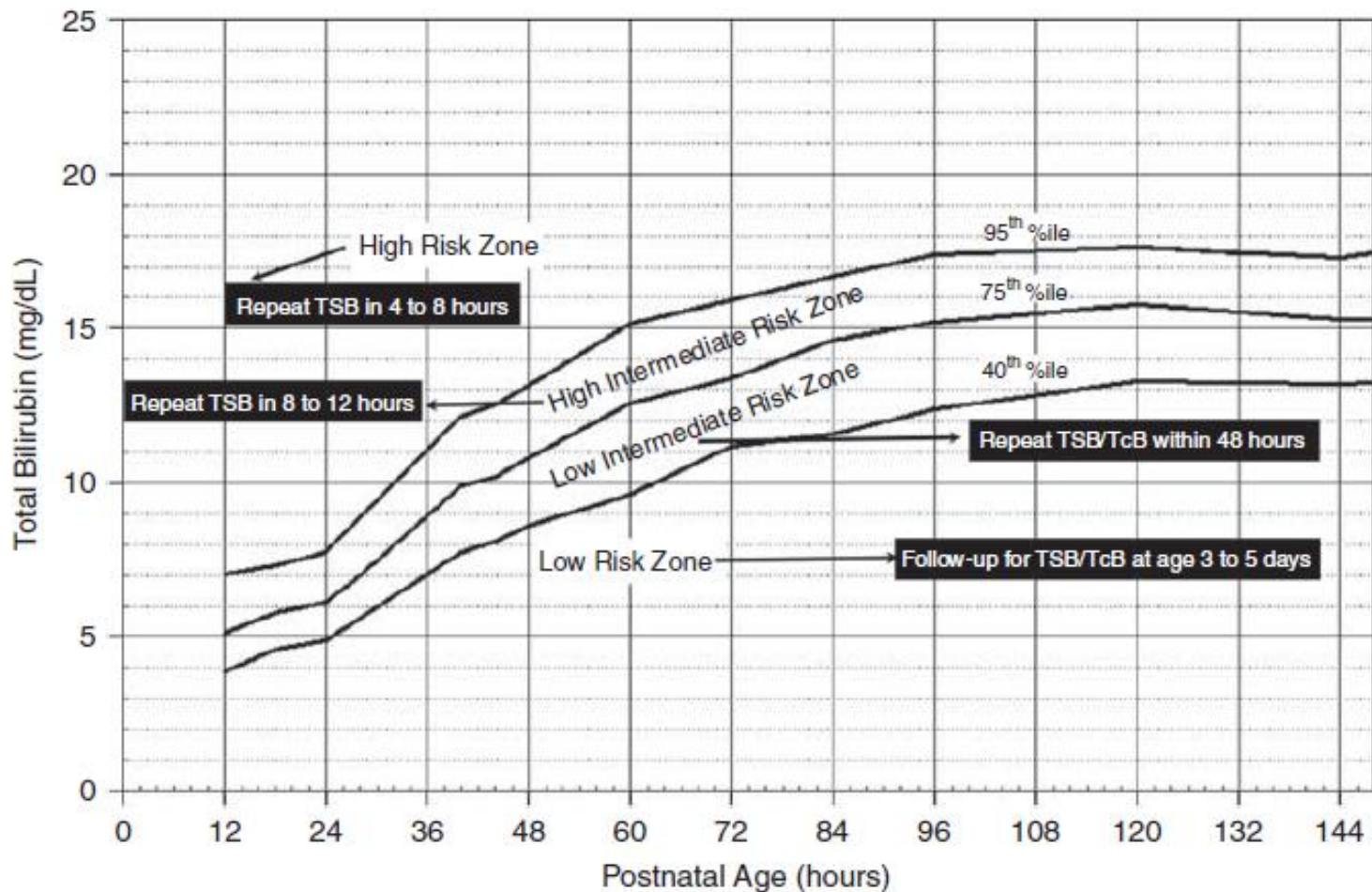
Is this infant ***at risk*** for  
severe hyperbilirubinemia using ***risk zone***  
... and if yes, When do I  
get the next bilirubin check?

Does this infant require phototherapy?  
...apply ***risk factors***.

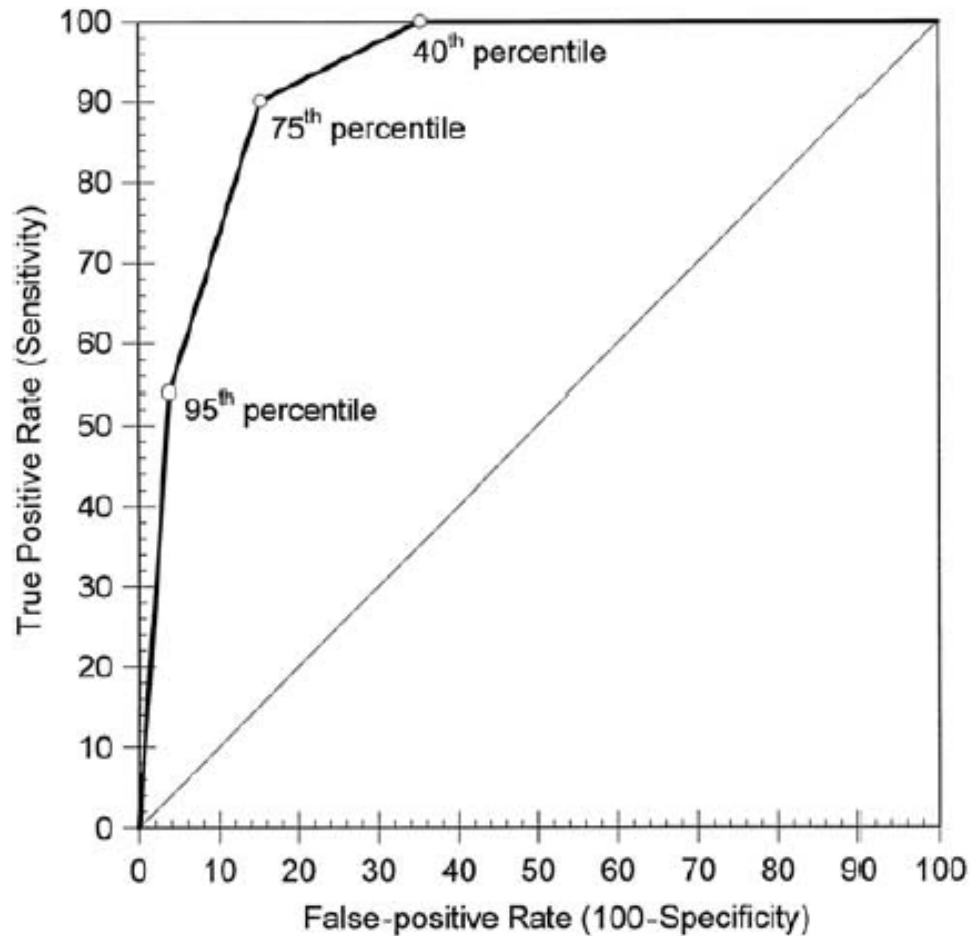
# www.Bilitool.org

- [Hour-specific Nomogram](#) for Risk Stratification
- Infants age 48 hours
- Total bilirubin 13 mg/dl
- Risk zone: **High Intermediate Risk**
- A follow-up visit and/or a recheck bilirubin value is recommended within 8-12 hours (*high-intermediate risk*)
- Risk zone is one of several [risk factors](#) for developing severe hyperbilirubinemia.

# Use the Bhutani Nomogram to determine Risk Zone



# High Sensitivity and Specificity



ROC Curve C-statistic=0.83

# Using the Nomogram

Risk Zone	Assessment	Intervention	Follow-Up
High >95%	hemolysis	Intensive phototx if rapid rise, promote breastmilk intake	Track TSB/TcB until reaching Low Risk Zone
High Intermediate (76-95%)	hemolysis	Promote breastmilk intake, phototx if rapid rise	Track TSB/TcB until reaching Low Risk Zone
Low Intermediate (40-75%)	<b>*Clinical Risk Factors</b> in LPI	LPI intervene if Clinical Risk Factors Term- promote breastfeeding	LPI Track TSB/TcB until reaching Low Risk Zone Term F/U 48 hrs.
Low (<40%)	Clinical Risk Factors	Routine care promote breastfeeding	Routine F/U at 3-5 days of life

Bhutani VK. J Perinatology. 2010

# \*Clinical Risk Factors

Risk Factors	Major Risk	Minor Risk	Decreased Risk
Gestational age	<input type="checkbox"/> 35–36 wk	<input type="checkbox"/> 37–38 wk	<input type="checkbox"/> ≥41 wk
Predischarge TSB/TcB	<input type="checkbox"/> >95th Percentile	<input type="checkbox"/> >75th–95th Percentile	<input type="checkbox"/> <40th Percentile
Visible jaundice	<input type="checkbox"/> First 24 h	<input type="checkbox"/> Before discharge	
Feeding	<input type="checkbox"/> Exclusive breastfeeding (1 risk if poor feeder or 1 weight loss <sup>b</sup> )	<input type="checkbox"/> Breastfed, nursing well	<input type="checkbox"/> Exclusive formula feeding
Previous sibling	<input type="checkbox"/> Received phototherapy	<input type="checkbox"/> Jaundiced, no phototherapy	
Blood groups Hemolytic disease	<input type="checkbox"/> Blood group incompatibility + DAT Other hemolytic disease (eg, G6PD)		
Race	<input type="checkbox"/> East Asian	<input type="checkbox"/> Latina/Latino	<input type="checkbox"/> African American unless G6PD deficiency (12%)
Other factors	<input type="checkbox"/> Cephalohematoma, significant bruising, or vacuum delivery	<input type="checkbox"/> LGA newborn, male, maternal, age ≥25 y, oxytocin in labor	<input type="checkbox"/> Discharged from hospital after 72 h

TSB, total serum bilirubin; TcB, transcutaneous bilirubin; DAT, direct antiglobulin test; G6PD, glucose-6-phosphate dehydrogenase; LGA, large for gestational age.

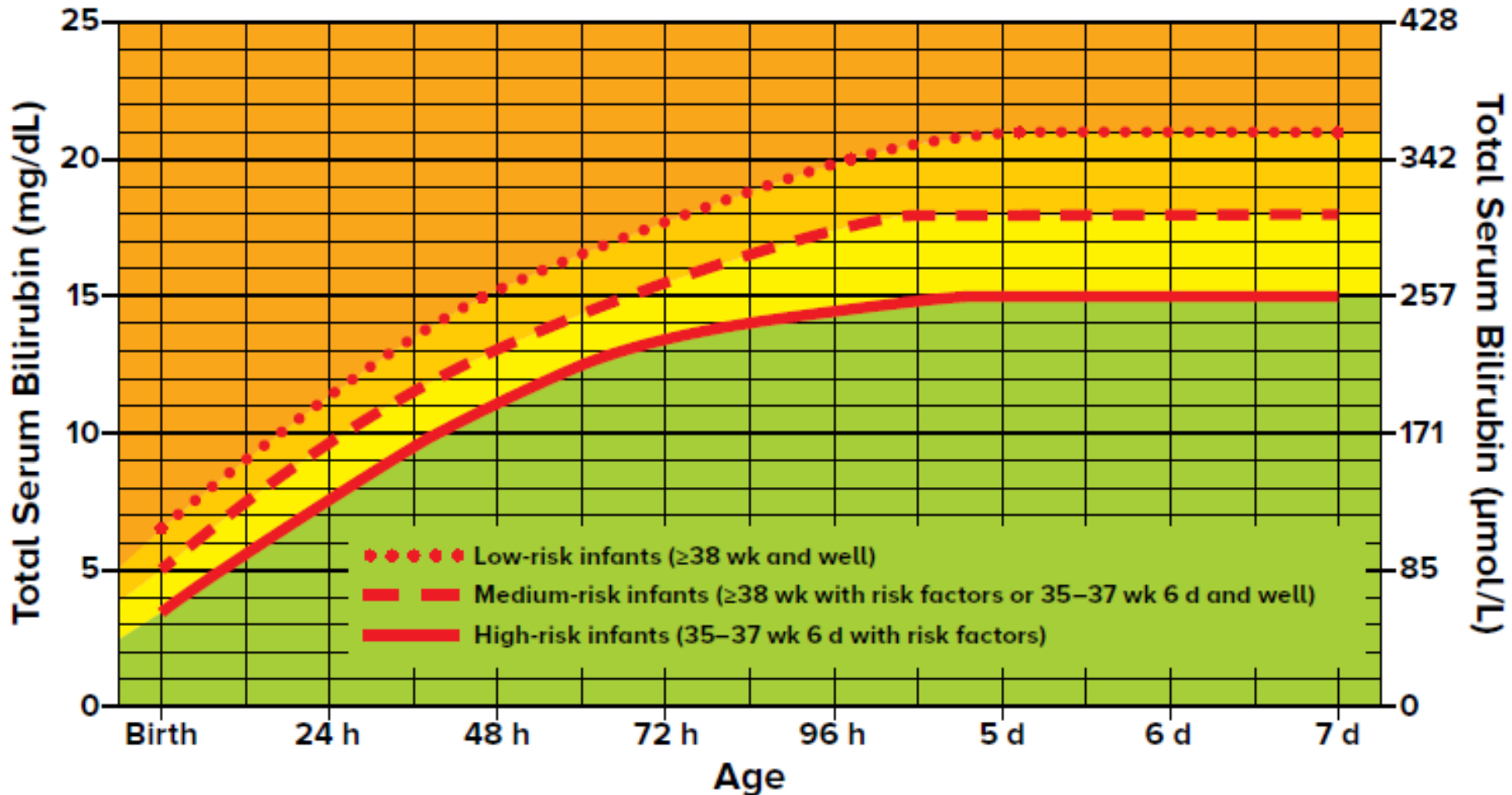
The risk factors highlighted in yellow are those most predictive for subsequent hyperbilirubinemia

<sup>a</sup>The more risk factors present, the greater the risk of developing severe hyperbilirubinemia.

<sup>b</sup>Weight loss of more than 7% to 10% in a breastfeeding newborn requires assessment and plan.

# Does the Infant Need Phototx?

## Phototherapy Guidelines for Newborns 35 or More Weeks of Gestation



Source: Maisels MJ, McDonagh AF. Phototherapy for neonatal jaundice. *N Engl J Med.* 2008;358:920–928

# Why Does Breastfeeding Lead to Early Onset Jaundice?

How can it be prevented?

## **Early and frequent suckling**

Infant-

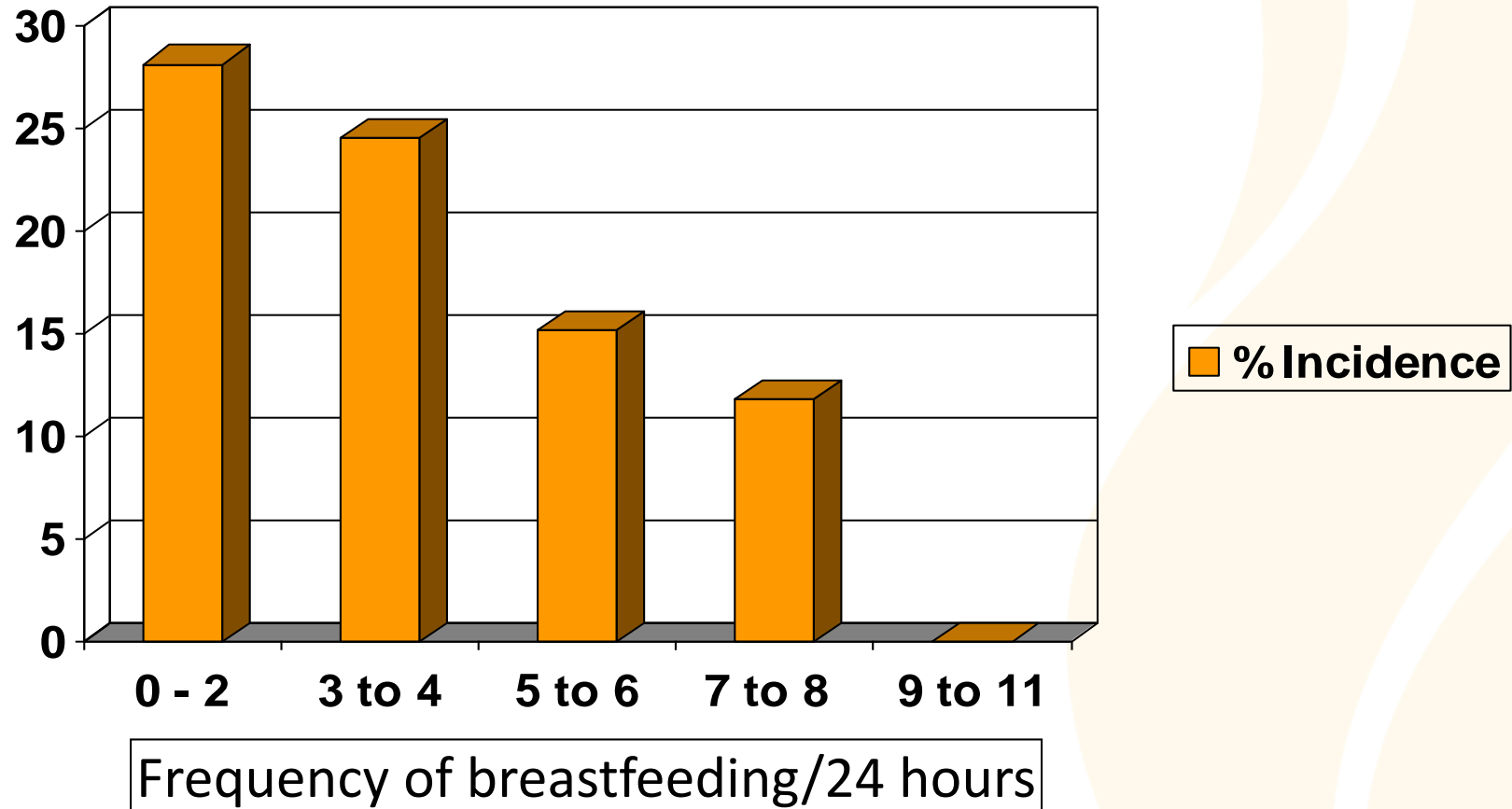
- stimulates passage of meconium
- Improves suckling technique to facilitate transition

Mom-

- Decreases chance of late Lactogenesis II
- Enhances production via prolactin

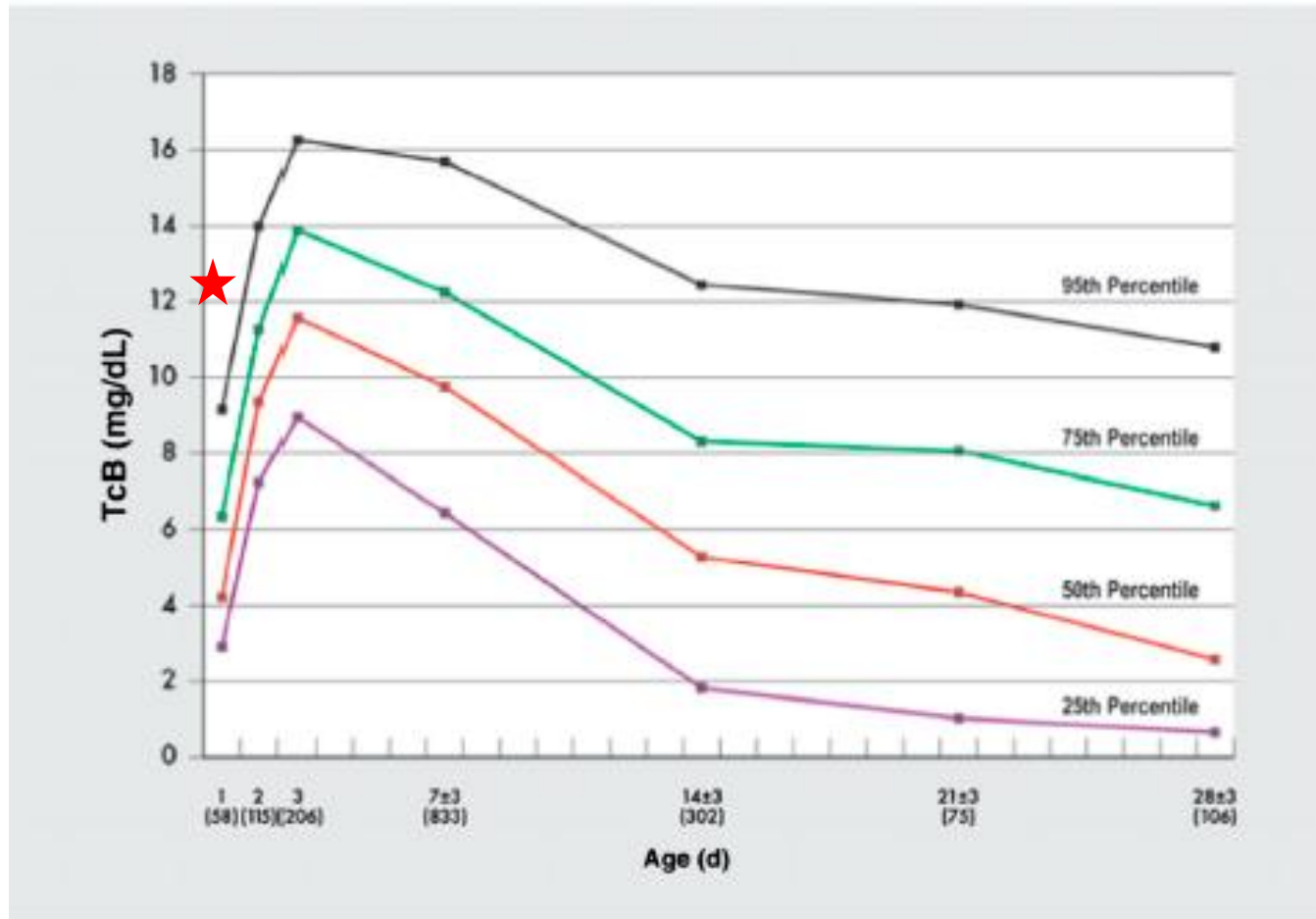


# Hyperbilirubinemia and Breastfeeding Frequency



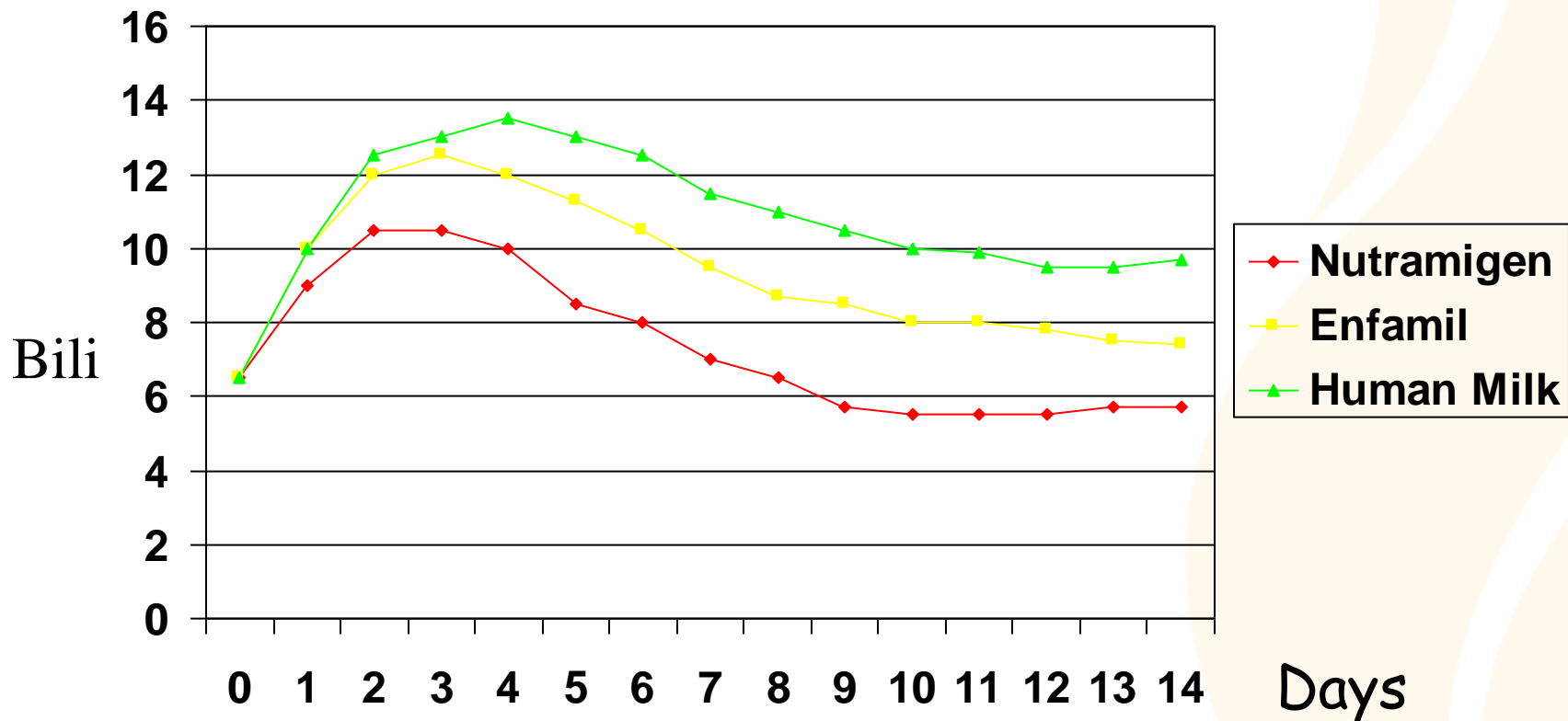
Yamauchi & Yamannouchi; *Pediatr* 1990;86(2):174

# What is normal for an exclusively breastfed newborn?



Maisels J. Pediatrics July 2014

# If you need to supplement with infant formula consider hydrolysate



Gourley GR. *NeoReviews* Feb 2000; 1(2):e25-30

# Revise Approach to Jaundice



- Establish new protocols
- Buy-in to maintain exclusive BF
- Consistent approach



Szucs K. et al. Pediatrics . 2013;131:e1982.

# At Risk for Hypoglycemia

- IDM (infant of a diabetic mother: gestational, Type 1 or Type 2 diabetes)
- LPT (late preterm infant: 34 0/7 to 36 6/7 weeks gestation)
- SGA (small for gestational age: birth weight less than 10<sup>th</sup> percentile)
- LGA (large for gestational age: birth weight greater than 90<sup>th</sup> percentile)
- Symptomatic (“jittery”) infant

# First Steps of Protocol

- **Try to feed at risk newborns immediately, but by no later than 30 to 60 minutes of life.** Allow the infant to breastfeed or feed 3-5 ml/kg expressed colostrum (or formula if colostrum or donor milk unavailable)
- Obtain the **first** heel-stick blood **glucose** on all at-risk newborns no sooner than **30 minutes AFTER completion of the first feeding** but by no later than 2 hours of life. Check immediately if infant symptomatic.

# Screening and Management of Postnatal Glucose Homeostasis in Late Preterm and Term SGA, IDM/LGA Infants

[(LPT) Infants 34 – 36<sup>6/7</sup> weeks and SGA (screen 0-24 hrs); IDM and LGA  $\geq$ 34 weeks (screen 0-12 hrs)]

**Symptomatic and  $<40$  mg/dL  $\longrightarrow$  IV glucose**

## ASYMPTOMATIC

### Birth to 4 hours of age

INITIAL FEED WITHIN 1 hour

Screen glucose 30 minutes after 1<sup>st</sup> feed

Initial screen  $<25$  mg/dL

Feed and check in 1 hour

$<25$  mg/dL

IV glucose\*

25–40 mg/dL

Refeed/IV glucose\*  
as needed

### 4 to 24 hours of age

Continue feeds q 2-3 hours

Screen glucose prior to each feed

Screen  $<35$  mg/dL

Feed and check in 1 hour

$<35$  mg/dL

IV glucose\*

35 – 45 mg/dL

Refeed/IV glucose\*  
as needed

### Target glucose screen $\geq 45$ mg/dL prior to routine feeds

\* Glucose dose = 200 mg/kg (dextrose 10% at 2 mL/kg) and/or IV infusion at 5–8 mg/kg per min (80–100 mL/kg per d). Achieve plasma glucose level of 40-50 mg/dL.

Symptoms of hypoglycemia include: Irritability, tremors, jitteriness, exaggerated Moro reflex, high-pitched cry, seizures, lethargy, floppiness, cyanosis, apnea, poor feeding.

AAP Committee on Fetus and Newborn. Pediatrics. 127(3); 2011:575 -579

# BF USA 6c: Administration of the supplemental feeding addressed

- Avoidance of artificial nipples
- Supplemental feeding devices utilized by facility
- Education to be conducted with the mother has been addressed regarding:
  - Feeding options
  - How to administer supplementation
- Medical order for supplementation
- Documentation for reason of the supplemental feeding



# Text for 6c

- Supplemental feedings require a physician's order
- Initiate protocol order per policy
- Provide supplementation of expressed breastmilk which is preferred (encourage mom to hand express or pump), donor breastmilk or 20 calorie infant formula as per protocol
- Suggested intake for the term healthy infant is a goal of 5-10 cc per feed on day of life #1, followed by 15-30 cc per feed on days of life # 2-3
- Notify the physician if the medical indication persists after two feedings

# Alternative Feeding Devices

- Utilizing an alternative feeding device is preferred method of supplemental feed compared to nipple/bottle feeding method (cup, syringe, finger feed, spoon)
- Educate family on safe use of alternative feeding devices such as syringe, cup and spoon
- Complete a formal evaluation of the mother-baby dyad including a direct observation of the next breastfeeding, and initiate a lactation consult

# Why No Bottles?

- Sensitive window of learning to suckle
- Artificial nipple or bottle supplementation to breastfeeding newborns may lead to a phenomenon known as ‘nipple confusion’ that may interfere with successful breastfeeding
- The strongest evidence is from premature newborns
- Collins C, Ryan P, Crowther C, McPhee A, Paterson S, Hiller J. Effect of bottles, cups, and dummies on breast feeding in preterm infants: A randomised controlled trial. *Br Med J.* 2004;329:193–8.

# Origins of Nipple Confusion

- The notion of nipple confusion was initially introduced in the WHO/United Nations Children’s Fund 1989 statement, which later became the basis for the United Nations Children’s Fund “Baby-friendly hospital initiative” and the “Ten steps to successful breastfeeding”
- Artificial teats may confuse the infant’s oral response because less work is needed to suck on an artificial teat, which might eventually decrease the child’s desire to suck on the breast

# Where's the Evidence?

- Canadian Study examined hcp's opinions with two questions:
- “Do you think that giving frequent bottle feeds leads to the ‘nipple confusion’ phenomenon?” and “Do you think that giving even one bottle feed leads to the ‘nipple confusion’ phenomenon?”
- Bottle feeding supplements was common, NGT feeding common in the level II nursery and among alternative devices used the most common were cup and finger feeding

Al-Sahab B, et al. Paediatr Child Health. 2010 Sep;15(7):427-31.

# Beliefs about Method Used

- Only 15.0% of the level II nurses agreed that frequent bottle feeds lead to the nipple confusion phenomenon
- Compared with 44.4% of the postpartum nurses and 56.2% of the pediatricians
- Findings demonstrated considerable variation in the practices and beliefs surrounding supplementation methods

Al-Sahab B, et al. Paediatr Child Health. 2010 Sep;15(7):427-31.

# The RCT

- **Randomized clinical trial of pacifier use and bottle-feeding or cup feeding and their effect on breastfeeding.**
- Supplemental feedings, regardless of method (cup or bottle), had a detrimental effect on breastfeeding duration.
- There were no differences in cup versus bottle groups for breastfeeding duration.
- Effects were modified by the number of supplements
- Among infants delivered by cesarean, cup feeding significantly prolonged exclusive, full, and overall breastfeeding duration

Howard CR, et al Pediatrics. 2003 Mar;111(3):511-8.

# Effects in the LPI

- **Effect of Cup Feeding and Bottle Feeding on Breastfeeding in Late Preterm Infants**
- Infants randomized to cup vs. bottle more likely to be exclusively breastfed, but no difference in overall breastfeeding and no difference in LOS

**Table 3.** Feeding Practices at Discharge and at 3 and 6 Months of Age (n = 522).

	<b>Bottle Feeding (n = 268), No. (%)</b>	<b>Cup Feeding (n = 254), No. (%)</b>	<b>P Value</b>
Any breastfeeding at discharge	244 (91)	252 (99)	< .001
Any breastfeeding at 3 months	221 (82)	223 (88)	.088
Any breastfeeding at 6 months	158 (59)	176 (69)	.015
Exclusive breastfeeding at discharge	123 (46)	184 (72)	< .0001
Exclusive breastfeeding at 3 months	126 (47)	196 (77)	< .0001
Exclusive breastfeeding at 6 months	113 (42)	146 (57)	< .001

Yilmaz G. et al. J Hum Lact. 2014 May;30(2):174-9.



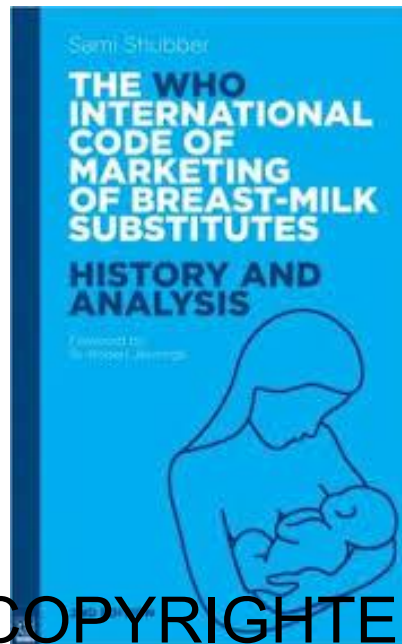
# Some Practical Issues

- Babies will likely consume less volume if they are not bottle fed
- You can deliver small aliquots via syringe feeding
- Consider expressed mother's milk since you are not expecting large volumes



# Procurement BF USA 6d

- Procurement of breastmilk substitutes, infant feeding bottles, and artificial nipples has been addressed
- This is part of the WHO Code of Marketing



# Text for 6d

- All formula, nipples, bottles, and alternative feeding devices will be purchased by XXX Hospital at fair market value, and will not be provided free or at a price under market value by industry
- No samples, marketing materials, brochures, educational materials or gifts provided by industry will be distributed by XXX Hospital.

# Conclusions

- Writing a supplementation policy is complicated
- Interdisciplinary support is necessary
- Remember- First do no harm
- Collaboration is key!

