THE FED IS BEST FOUNDATION

FED IS BEST GUIDE TO SAFE INFANT FEEDING

FEEDING PLAN

Updated August 2018

I do not want my baby to lose greater than 7% of their birth weight.*

Birth weight _____kg

7% wt. loss _____kg

(BW x 0.93)

ex. 3 kg = 6 lbs 10 oz

(conversion calculator)

3 kg x 0.93 = 2.79 kg

**Recommendation of the AAP SECTION ON BREASTFEEDING Guidelines: Breastfeeding and the Use of Human Milk (2012).*

Patient:_____

DOB: _____

Feeding Plan for My Baby

Name of baby: _____ DOB:_____

I wish to get assistance from my nurses, doctors and lactation consultants to achieve my feeding goals without risking my child's health. I am aware that the most common reason an exclusively breastfed (EBF) newborn is rehospitalized is due to problems with insufficient feeding. I am aware that 22% or 1 in 5 mothers and up to 44% of first-time mothers, have been found to have delayed onset of copious milk production (lactogenesis II, DLII), which puts her child at 7-fold increased risk of excessive weight loss. I wish to feed my child to optimize my feeding success and minimize the risks of feeding complications. Outlined below are my feeding goals and what I would like to do if problems arise during the course of my child's feeding.

Informed Consent Regarding Risks of Insufficient Feeding

I understand the risks of exclusive breastfeeding before onset of copious milk production is caused by insufficient breast milk intake due to insufficient breast milk supply and/or insufficient transfer of milk. The complications include increased incidence and severity of the following complications:

- excessive jaundice (yellow skin, hyperbilirubinemia occurs to 10-25% of EBF newborns)
- excessive weight loss (>7% weight loss according to the AAP 2012 Breastfeeding Guidelines)
- dehydration (>7% weight loss occurs to >50% of EBF newborns)
- hypernatremia (high blood sodium >145 mEq/L occurs to 36% of EBF newborns)
- low blood sugar (hypoglycemia, glucose < 40 mg/dL occurs to 10% of EBF newborns)
    - Note: ≥ 47 mg/dL is the only prospectively validated glucose level that has been shown to protect newborns from long-term developmental delay. The Pediatric Endocrine Society recommends maintaining glucose above 50 mg/dL in the first 48 hours and above 60 mg/dL thereafter) initial _____

I understand the above-mentioned complications from insufficient feeding can result in the need for hospitalization in order to protect my child's health. initial _____

I understand the above-mentioned complications from insufficient feeding can result in brain injury, which can subsequently result in developmental delays, disabilities, lower cognitive development, lower academic achievement, problems with vision, hearing, motor, sensory, language and behavioral development and higher rates of seizure disorder, cerebral palsy and rarely, death. initial _____

I understand that ***timely and adequate supplementation*** with properly handled and/or properly prepared certified banked donor milk and/or formula, depending on my child's unique nutritional requirements, can prevent nearly all the above complications. initial_____

I understand the risks of supplementation include insufficient breast milk supply if my child is supplemented *without continuing the frequent breastfeeding* (or self expression or bilateral breast pumping, if indicated) needed to stimulate milk production. initial _____

Patient:_____
DOB: _____

MY CURRENT RISK FACTORS FOR FEEDING COMPLICATIONS, PATHOLOGICAL JAUNDICE AND/OR REHOSPITALIZATION ARE THE FOLLOWING:

Risk Factors for Feeding Complications:	Risk Factors for Pathological Jaundice or Hyperbilirubinemia:
❑ First-time mother (44% DLII) ❑ Exclusive breastfeeding ❑ Cesarean section ❑ Complicated/prolonged labor > 12 hrs ❑ Prolonged "pushing" stage of labor > 1 hr ❑ History of low milk supply, delayed (>72 hours) or failed lactogenesis II ❑ Pre-term baby (< 37 weeks gestation) ❑ Small-for-Gestational-Age baby/IUGR ❑ Large-for-Gestational Age baby ❑ Medical complications with baby ❑ Diabetes ❑ Hypertension ❑ Pre-pregnancy BMI > 27 ❑ Smoking ❑ Hypothyroidism ❑ Hypopituitarism ❑ Advanced Maternal Age (≥ 30 years old) ❑ Polycystic ovarian syndrome ❑ Prior breast surgery/injury/piercings ❑ Minimal growth of breast tissue during pregnancy (breast hypoplasia), tubular or asymmetric breasts, flat/inverted nipples ❑ Infertility history ❑ Excessive blood loss during delivery (> 500 mL blood, need for transfusion) ❑ Sickle cell disease ❑ Autoimmune diseases: Multiple sclerosis, Crohn's, Ulcerative Colitis, Lupus, Rheumatoid Arthritis ❑ Psychosocial challenges: Addiction, PTSD, sexual trauma, depression, anxiety ❑ Retained placenta	❑ First-time mother ❑ Exclusive breastfeeding ❑ History of low milk supply, delayed or failed lactogenesis II ❑ Rapid or excessive weight loss > 7% ❑ Prior history of jaundiced newborn ❑ Male gender ❑ Maternal age ≥ 25 ❑ Asian race ❑ Jaundice within the first 24 hours ❑ Jaundice before discharge ❑ Pre-term baby < 37 weeks ❑ Gestation 37-38 weeks ❑ Large-for-Gestational Age baby ❑ Small-for-Gestational Age baby ❑ Blood type incompatibility, G6PD deficiency, other hemolytic disease ❑ Cephalohematoma or bruising and swelling on the scalp from birth ❑ Vacuum-delivery ❑ Discharge at 48 hours or less

Patient:_____
DOB: _____

1. **My feeding goals are: (choose one)**

- ❑ Breastfeed while supplementing until my milk comes in, then exclusively breastfeed thereafter
- ❑ Exclusively breastfeed from birth
- ❑ Extended mixed-feeding with breast milk and formula (combo-feeding)
- ❑ Formula-feed exclusively

2. I want to know the birth weight in kilograms at birth and all subsequent weights and percent loss thereafter. 7% is the maximum weight loss recommended by the AAP.[5]

Birth weight _____ kg
7% weight loss _____ kg (BW x 0.93)

(No weight loss threshold protects a newborn from hypoglycemia and its negative effects on the brain. Only glucose checks and providing sufficient calories protects against hypoglycemia. Newer data suggests that even early, transitional hypoglycemia within 6 hours of birth, even without symptoms, can result in long-term impaired brain development.)

3. I wish for my child to be weighed by the following schedule:

- ❑ Twice daily to closely monitor weight loss *(recommended for exclusively breastfed babies)*
- ❑ Once daily *(may be sufficient for combo-fed and formula-fed babies)*

4. I wish for my child to not lose greater than (select all that apply):

- ❑ 7% of birth weight at any time
- ❑ >75%ile of the Newborn Weight Loss nomogram
- ❑ I wish for my child to be supplemented to their satisfaction and lose as little weight as possible (supplementation must occur only after nursing to stimulate milk production)

5. I would like assistance with learning how to feed my child on the first day.

- ❑ Manual expression of breasts **before every feeding** to check for presence of milk (Video tutorial http://newborns.stanford.edu/Breastfeeding/HandExpression.html)
- ❑ Assistance with latch and position
- ❑ Assistance with hearing swallows to ensure intake of milk
- ❑ Assistance with learning how to pump my milk, especially if baby is sleepy at breast and is not actively breastfeeding every 2- 3 hours on both breasts for at least 10-15 minutes.
- ❑ A pre- and post-breastfeeding weight or "weighted feed" to measure the amount my child is gaining in a feeding session after my milk comes in
- ❑ I would like education on formula-feeding
- ❑ I would like education on combo-feeding

Patient:_____
DOB: _____

6. **In the event that my child reaches 7% weight loss at any time, I would like to:**

- ❑ Express colostrum/transitional milk and feed it to my child by syringe / spoon
- ❑ If little to no milk is present, I would like to offer screened and pasteurized donor milk if available and if my child has medical indication for it (prematurity)
- ❑ If little to no milk is present, I would like to supplement my child with formula
- ❑ I would like a "weighted feed" to be done
- ❑ I would like an immediate glucose check

(Note: > 7% weight loss has been associated with increased rates of hyperbilirubinemia and hypernatremia)

7. **If I am exclusively breastfeeding, to protect my baby from complications due to insufficient milk intake, I would like my child to be monitored:**

- ❑ Once daily transcutaneous bilirubin checks (or serum bilirubin test if necessary)
- ❑ Glucose monitoring per hospital protocol for high-risk babies (hypoglycemia in healthy, full-term, exclusively breastfed babies has been shown to occur in 1 in 10 babies overall and 1 in 4 first-born babies in the first 48 hours)
- ❑ High blood sodium screening (hypernatremia ≥ 145 mEq/L has been recently shown to occur to as many as 36% of breastfed newborns and can occur by 4.77% weight loss).

8. **If my child appears hungry and unsatisfied at the breast:**

- ❑ I would like to supplement until my child is satisfied and no longer crying or lethargic (15 mL at a time, repeated until satisfied)
- ❑ I would like to supplement with my own pumped breast milk first
- ❑ I would like to supplement with screened and pasteurized donor milk if available to my child
- ❑ I would like to supplement with formula
- ❑ I would like to supplement after nursing sessions to continue stimulation of milk production.
- ❑ I would like assistance with manual expression to evaluate for presence of milk
- ❑ If my newborn is sleepy and/or not breastfeeding well, I would like to supplement to provide energy to improve breastfeeding.

***The size of the newborn stomach at birth has been found to be 20 mL or larger, much larger than what has been previously taught.**

9. **If I am supplementing, I would like to supplement by:**

- ❑ Cup
- ❑ Spoon
- ❑ Supplemental nursing system
- ❑ Bottle (slow-flow, nursing-friendly preferred if breastfeeding)

Patient:_____
DOB: _____

10. If I am supplementing, I would like to supplement with:

- ❑ Banked, screened and pasteurized donor milk if available to my child
- ❑ Elemental formula
- ❑ Hydrolyzed formula
- ❑ Standard formula

11. Other preferences:

- ❑ No pacifiers
- ❑ I want a pacifier for my baby
- ❑ Rooming-in with my baby
- ❑ Option to sleep during the day / night by sending my child to the nursery so I may recover from delivery for the safety of my baby
- ❑ I do not want to be left alone while breastfeeding or doing skin-to-skin while recovering to avoid accidental suffocation and falls (falling asleep, immobility, pain medication effect).

I wish to reach my personal feeding goals while safely and adequately feeding my baby.

I have additional concerns and requests:

_____

_____

_____

Respectfully,

Signature

_____

Mother's name

Disclaimer: This document does not replace in-person physician evaluation and treatment. This document is meant to inform parents of the most recent data regarding infant feeding and to increase their knowledge on how to protect their newborns from hyperbilirubinemia, dehydration, hypernatremia, hypoglycemia and extended or repeat hospitalizations due to complications from underfeeding. Earlier supplementation may be needed for babies who are premature or have medical conditions. It is recommended that a parent seeks evaluation by a physician trained in newborn care for any concerns regarding the health and safety of her baby if they arise.

initial _____

Patient:_____
DOB: _____

Tracking Baby to Ensure Safe Feeding

Hours/ Time	Birth _____	12 hrs _____	24 hrs _____	36 hrs _____	48 hrs _____	60 hrs _____	72 hrs _____
Weights# (kg)/% loss							
Bilirubin* (see chart)							
Glucose (Normal > 50 mg/dl)							

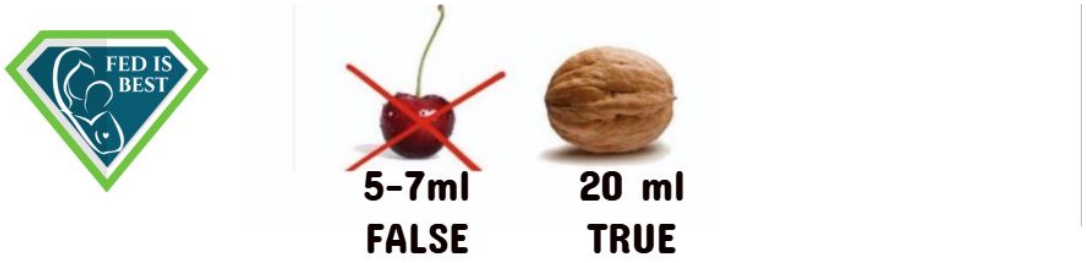
*To calculate the bilirubin risk category, please go to http://bilitool.org or the see last page.

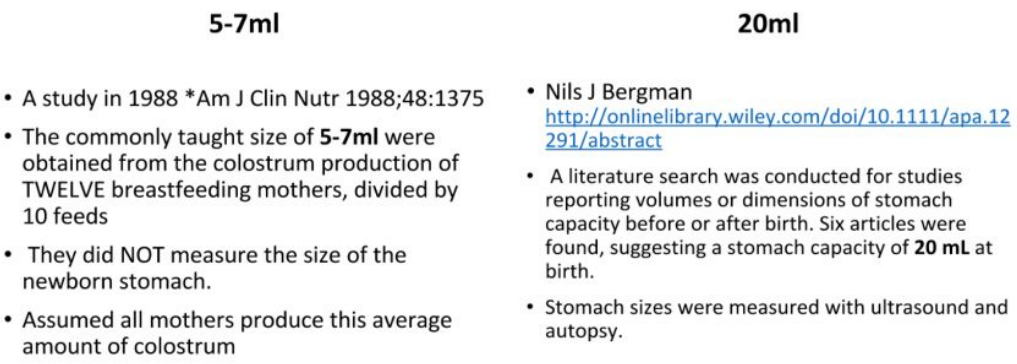
#To calculate the percent weight loss, go to https://www.newbornweight.org.

Percent weight loss = (Birth weight - current weight)/birth weight) x 100%

Note: Many errors can be made when using pounds and ounces for weight. Convert pounds and ounces to kilograms with the following: (Weight in lbs + ounces/16) divided by 2.2 = weight in kilograms. **)**

Please note that wet and dirty diaper counts are not tracked on this feeding plan because they have not been shown to have any correlation with actual breast milk intake or prevention of excessive weight loss.[14] It is important to track eliminations on the hospital records to be sure your baby is eliminating normally.





Patient:_____
DOB: _____

THE FED IS BEST FOUNDATION

Recent data trends show a concerning rise in hospitalizations of exclusively breastfed newborns. This is due to feeding complications from insufficient breast milk intake, including jaundice, hypoglycemia, and dehydration, which can impair a newborn's future brain development.

Know the signs to look for when your newborn baby is HUNGRY, in the first days of life and watch your baby for:

H	**Hypoglycemia (low blood sugar) jittery hands, low body temperature, inconsolable and high-pitched crying, turning blue and seizures**
U	**Unsatisfied nursing, lasting longer than 30 minutes and occurring more frequently than every 2 hours, crying despite prolonged breastfeeding**
N	**Not waking for feeding every 3 hours, difficult to arouse and very sleepy, not maintaining latch, limpness, lethargy**
G	**Growth or weight loss exceeding 7% at any time, which increases risk of high sodium levels (hypernatremia) and excessive jaundice**
R	**Reduced wet and dirty diaper counts (no wet diapers in 6 hours), Red brick dust on diapers, dry lips and mouth, crying without tears**
Y	**Yellowing of the skin or eyes, especially below the face, known as hyperbilirubinemia or excessive jaundice**

If you see the signs that your baby is HUNGRY, seek medical assistance from your pediatrician immediately. Supplementation may be needed if evaluation is not immediately available.

For more resources about how to safely breastfeed your newborn baby, click on parent resources at: https://fedisbest.org/resources-for-parents/feeding-plan/

The Fed is Best Foundation is a registered 501(c)3 tax-exempt non-profit organization of health professionals and parents who study the science of infant feeding and work to identify dangerous gaps in current breastfeeding protocols, guidelines, and education programs in order to provide families and health professionals the most up-to-date evidence-based resources to practice safe infant feeding with breast milk, formula, or a combination of both.

STEP BY STEP GUIDE FOR SUPPLEMENTING

Supplementing does not ruin your chances at breastfeeding!
Early limited supplementation has been shown to encourage breastfeeding duration and recent research shows that nipple confusion is a myth.
1 in 5 mothers can experience delayed milk onset which may lead to serious complications of jaundice, hypoglycemia and dehydration from underfeeding during the first days of life.
These complications are the leading causes of newborn hospitalization in the world.
You can supplement from birth, when indicated, while protecting your baby from exclusive breastfeeding complications, while also protecting your milk supply.

1 Know Your Risks For Delayed Milk Production And How To Manually Self Express To Check For Colostrum

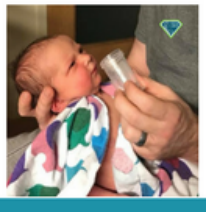
Knowing your risks will help guide you for timely supplementation if indicated.
Manual self expression before every breastfeeding session will check for the presence of colostrum.

2 Breastfeed Your Baby

Breastfeed your baby for 15-20 minutes on both breasts, every 2-3 hours.
Effective latch confirmed and transfer of colostrum verified with swallowing.

3 Hunger Signs And Cues

If your baby still exhibits hunger cues after breastfeeding, begin supplementing with 15 ml at a time, or until content.
Supplement with donor milk from a milk bank or ready to feed formula.

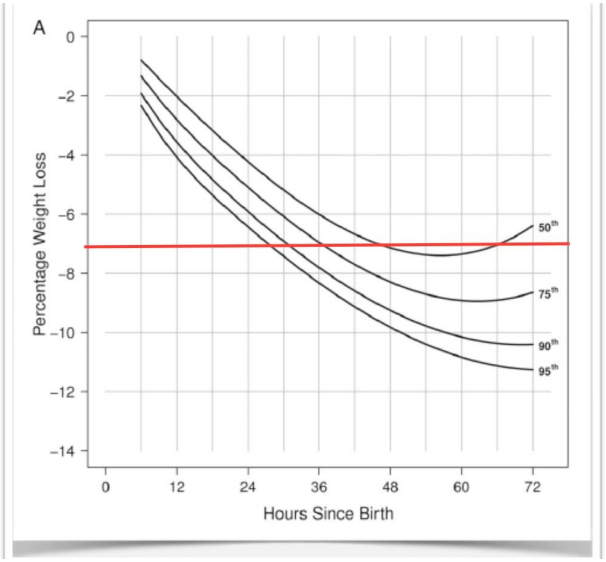


There Are Different Ways To Supplement Your Baby

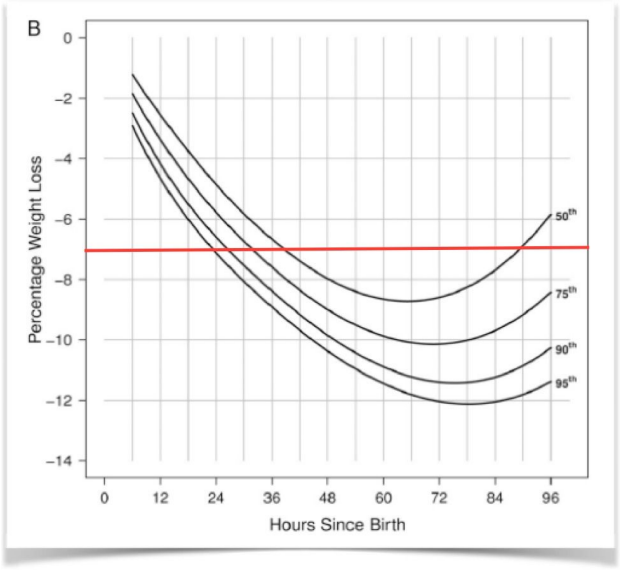
SNS Tube feeding
Cup Feeding
Bottle Feeding
Syringe and Spoon Feeding

Weight Loss Nomogram for Exclusively Breastfed Newborns

(Red line indicates 7% threshold)



Weight loss of vaginally-delivered exclusively breastfed newborns



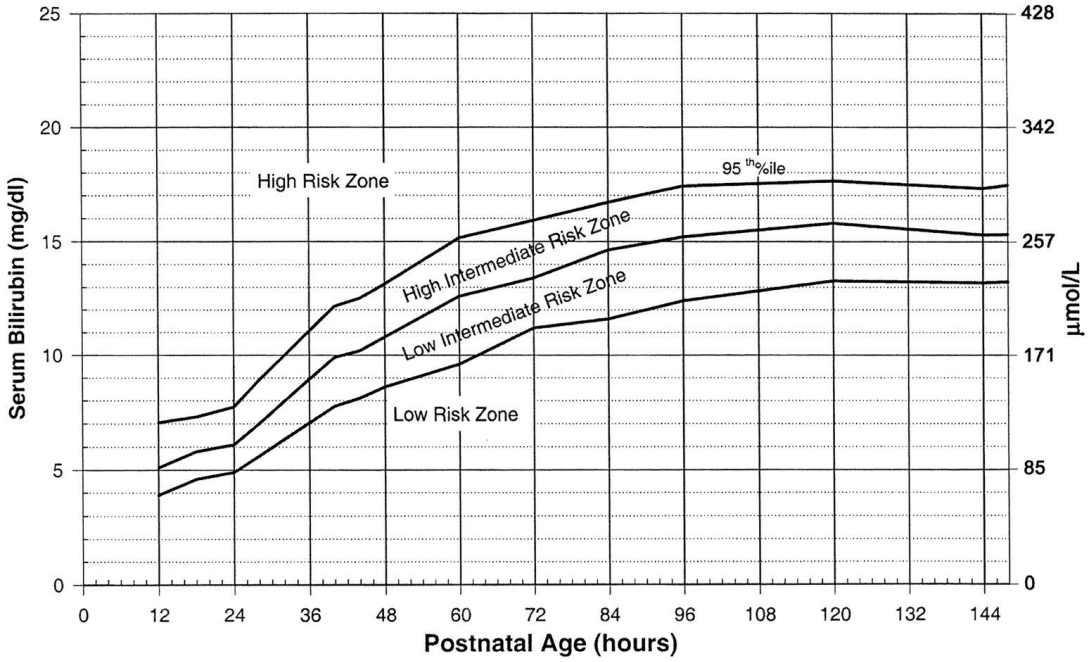
Weight loss for cesarean-delivered exclusively breastfed newborns

To calculate the newborn weight loss percent, go to https://www.newbornweight.org

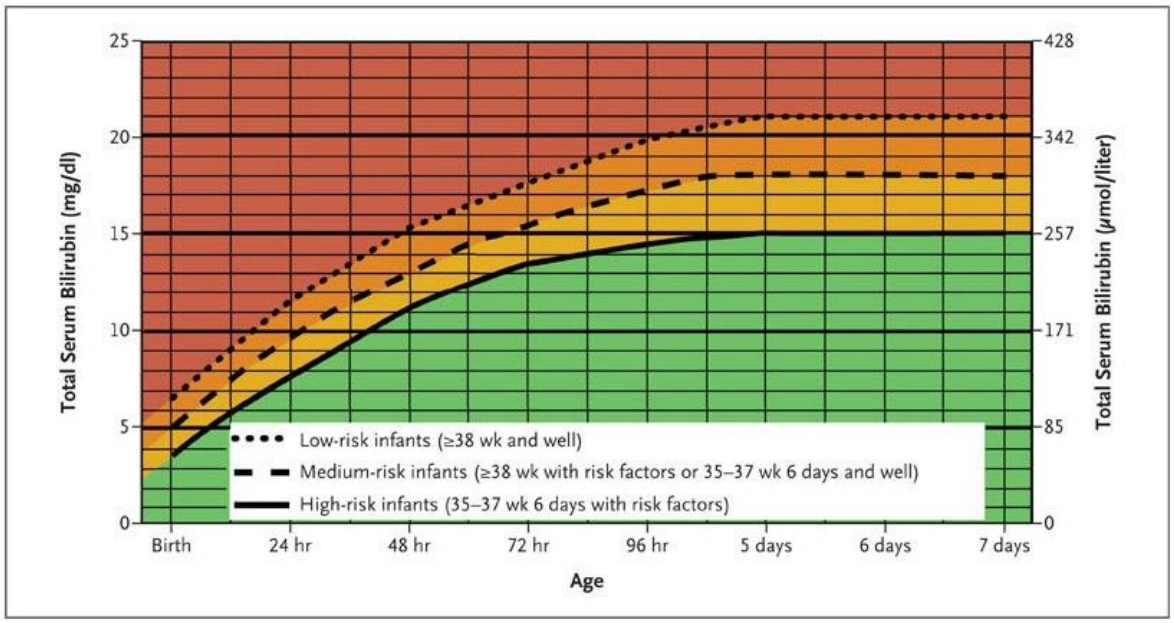
Note: This weight loss nomogram has not been tied to clinical outcomes. Therefore, a child at the 50% percentile can still experience complications. Every child has their own tolerance for weight loss. A child that is crying inconsolably and displaying signs of distress may in fact require supplementation sooner than 7%.

Patient:_____
DOB: _____

Serum Bilirubin Nomogram by Hour



Guidelines for phototherapy in hospitalized infants of 35 or more weeks' gestation.



*To calculate the bilirubin risk category on the Bhutani nomogram, please go to http://bilitool.org

Patient:_____
DOB: _____

HOW TO POWER PUMP

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ABOUT POWER PUMPING

Power Pumping utilizes a breast pump to pump in rapid intervals which helps you ramp your milk supply. It aims to stimulate the hormone Prolactin by completely expressing the milk out of your breasts. It is most effective when done immediately after a nursing session or in lieu of a nursing session.

THE SPECIFICS

In the best case scenario, a power pumping session should take place over **1 hour**, but can be broken up into **2 30 minute sessions**. **Pump for 10 minutes then rest for 10 minutes.** Repeat this throughout the session. You can try to pump hands-on while massaging to make sure breasts are fully emptied. For two 30 minute sessions, you will pump-rest-pump, break, then pump-rest-pump again to finish it off.

IMPORTANT TO REMEMBER

- Ensure the pump flange fits the breast to prevent discomfort or pain while pumping
- Don't use herbal supplements. Use medication under the care of a prescribing physician.

HELPFUL TIPS

- Use a warm compress to encourage let-down.
- Listen to music, watch videos or look at your baby to encourage milk production.
- Use a hands-free pumping bra so you can massage breasts while pumping.
- Try pumping in the morning. 75% of moms have more milk in the early morning hours.

source: https://fedisbest.org/resources-for-parents/power-pumping-promote-breast-milk-production/

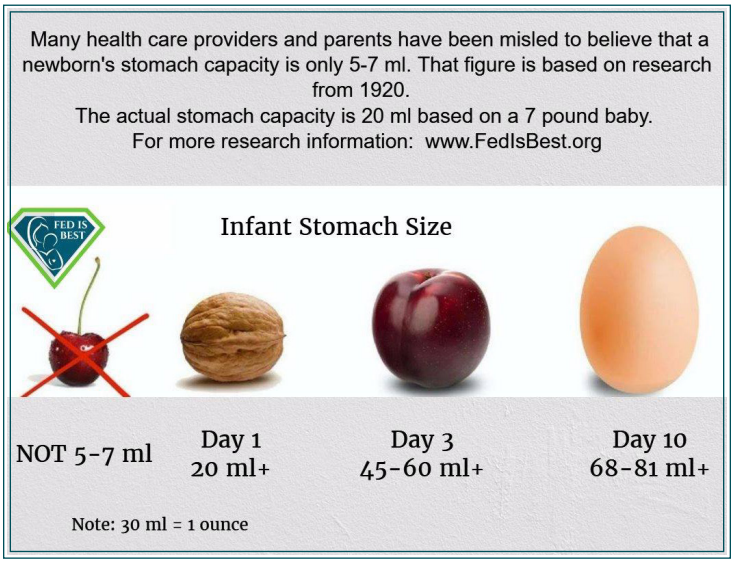
The Fed is Best Foundation Presents:
THE NEWBORN STOMACH SIZE MYTH

When working in the special care nursery, babies are always fed according to their weight and cumulative losses, to determine their caloric requirements for intake amounts and optimal growth. That is contrary to a lot of non-clinical discussion you'll read out there on the internet about an infant's intake needs, which suggest it's mostly based on stomach size. So what's fact and what's fiction?

Calories and Feeding Amounts for Breastmilk, formula, and colostrum

What science tells us is that mature breastmilk averages around 20 calories per ounce (~30ml) and formula contains approximately 20 calories per ounce as well. Thus their per-milliliter (mL) calorie count is on average the same. Colostrum, a key substance that imparts passive maternal immunity to a newborn in the first few days of life if a mother breastfeeds, is lower in fat and carbohydrates than those two, and comes in around 17 calories per ounce (~30ml) (Guthrie 1989). With that knowledge in mind, current hospital feeding protocols for formula-fed babies range from feeding 10-30 ml for newborns less than 6 pounds' every 2-3 hours and feeding newborns over 6 pounds 10-30 ml every 3 hours on the first day of life.

But according to the newly updated Academy of Breastfeeding Medicine's Supplementation Protocol, they suggest exclusively breastfed babies be fed 2-10 ml per feeding and they reference the infant stomach size according to outdated studies (1992 and 1920) to reflect intake volume. As you can see, that's substantially less for a feeding than our current hospital clinical protocols state. They also say there is no definitive research available and the amount of supplement given should reflect the normal amounts of colostrum available, the size of the infant's stomach and the age and size of the infant. Intake on day 2, post birth is generally higher than day 1 in relation to infant's caloric demand. Based on the limited research available, suggested breast milk intakes for healthy, term infants their feedings should be based on satisfaction cues despite their guidelines.



Why the volume difference between formula and breastfeeding newborns despite the same caloric amount? Why are hospitals able to feed an infant 10-30ml on day one if their stomach size is allegedly at most, 7ml? And where did the current idea of newborn stomach size (and with it, an "optimal" calorie amount) originate from?

The Myth of the Newborn Stomach Size: Where did it come from?

Nonclinically, one may search on google since that is where most lactation consultant patients go. You will be led to a plethora of visual images depicting newborn stomach size. Some of the most popular images were the belly ball models that lactation consultants wear on their lanyards so they can visually educate new mothers how big their newborn's stomach size "is."

Digging back into the science behind these belly balls, in the 2008 Journal of Human Lactation you can find a published article that reveals a completely different utility for belly ball models.

Marble/ball models are often used to represent newborn stomach capacity; however, their accuracy has not been determined:

"Measurement of infant stomach capacity has been attempted for over 100 years. Exact volumes cannot be standardized, but data suggest that anatomic stomach capacity and physiologic stomach capacity vary widely." In addition, "It is important to note that because a wide range of feeding volumes on day 1(1.1-20.4 mL) and day 3 (13.1-103.3 ml) has been reported, and the reasons for these variances are unclear, it may be best to simply acknowledge that feeding volumes vary widely and like stomach capacity, do not lend well to visual representation given our current knowledge."

Despite that qualification, new moms are inundated with images where there are a series of bottles filled with milk depicting the size of an infant stomach according to each day after birth, sometimes compared with fruit or different sized marbles and balls.

In continuing the search, this popped up. Recent research in 2013 from Dr. Nils Bergman who published this study, which says:

"There is insufficient evidence on optimal neonatal feeding intervals, with a wide range of practices. The stomach capacity could determine feeding frequency. A literature search was conducted for studies reporting volumes or dimensions of stomach capacity before or after birth. *Six articles were found, suggesting a stomach capacity of 20 ml at birth*."

According to Dr. Bergman, "There is reasonable consensus on the amount of milk that human term newborn infants need per day, figures given vary from 150 to 160 mL/kg/day." This means that an average 3 kg or 6.6 lb newborn requires 450-480 mL or 16 ounces of milk a day. At 66 Calories/dL, this would roughly be 100-106 Cal/kg/day, which is the published daily caloric requirement for a newborn. This total volume can be given in smaller volumes more frequently or larger volumes less frequently, 2 ounces ever 3 hours or 1.3 ounces every 2 hours.

His article poses the hypothesis that the feeding interval should be 20 mL every 1 hour assuming that the stomach empties only once every hour. However, the real-life clinical application of this feeding interval would quickly lead to maternal and newborn exhaustion from lack of sleep and increased risk of postnatal depression, breastfeeding cessation and even suffocation from a mother falling asleep with her newborn during breastfeeding. In addition, his feeding interval does not take into account that the stomach actually empties during feeding and therefore the feeding capacity of a newborn is higher than 20 mL. Feeding capacity and satisfaction actually depend on the release of the hormones CCK and amylin, which slow down stomach emptying and signals the brain to stop accepting food. The clinical experience of health professionals has shown that even one-day old newborns are able to easily tolerate 15-30 mLs per feeding. 30-60 mL every 2-3 hours would in fact meet a newborn's full daily caloric requirement and therefore prevent starvation and brain-threatening low blood sugar (hypoglycemia).

As a long-time NICU nurse and IBCLC, my concern has always been why mothers are taught universally that their exclusively-breastfed newborn baby only needs 5-7 mL of colostrum per feeding when clearly there is no scientific evidence that supports it (and why clinical experts currently feed infants more, based on science that is available)? Gastric emptying is complete in one hour into the small intestine which allows for milk volume to be more than 5-7 ml every 2-3 hours as recommended. Restricting a child's feeding to 5-7 mL even as often as every one hour will not meet the daily caloric requirement of a newborn and can quickly lead to starvation and hypoglycemia.

So How Often Should Breastfed Babies Eat?

There is no single right answer to this question because each baby has a different weight and unique calorie requirements. Babies should also be fed by infant cue to satisfaction. It's time to ditch the belly models, update our breastfeeding education resources according to the current scientific resources and practice science based infant feeding practices!

For more information, visit: https://fedisbest.org/2017/06/newborn-stomach-size-myth-not-5-7-ml/