

The Tiny Baby's Journey to the Breast



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Disclosures

- * I am the Clinical Nurse Specialist in the NICU at Eisenhower Health
- * I provide educational consultation for Medela

Objectives

- * Verbalize what "breastfeeding" looks like at various stages of the Neonatal stay
 - During respiratory support with no feedings or early trophic feedings
 - During the initiation of Cue based feeding
 - As baby is gaining competence in feeding
 - When baby is preparing for discharge
- * Discuss the needs of the extremely low birth weight infant while transitioning from gavage to the breast feeding
- * List two breastfeeding positions that can be useful when feeding an extremely low birth weight infant at the breast
- * List differences in the oral suction of a baby when feeding at the breast vs feeding from a bottle

Importance of Human Milk

Premature infants are especially vulnerable and benefit greatly from the provision of human milk

- * Early colostrum provides immunity and protection
 - * Both enteral feeding and oral care
- * Colostrum and human milk reduce systemic inflammation
 - * Neonatal gut is protected from Necrotizing Enterocolitis (NEC)
 - * Retinopathy of Prematurity (ROP) is decreased
 - * Chronic Lung Disease (CLD) rates are reduced
- * Colostrum helps to “grow” the intestine in prematurely delivered infants
 - * Early introduction to colostrum and human milk improves the progression of feedings in the premature infant

(Wood, L., 2013)

Early practices influence the baby's progression to feeding at the breast

- * Early start of trophic feeds
 - * Provision of early trophic feeds engages the intestines
 - * Introduction of colostrum stimulates intestinal growth
 - * Colostrum provides immunity prior to the closing of the paracellular pathways
- * Oral Care with colostrum
 - * MALT, GALT & OFALT
 - * Gustatory development
- * Non Nutritive Sucking (NNS)
 - * Pacifier during gavage feeds
 - * Pacifier with oral colostrum care

(Seattle children's 2021)

Importance of Breastfeeding Behaviors

Breastfeeding competence is NOT standardized at a fixed gestational age

- * Early practices influence the baby's progression to feeding at the breast
- * Baby at the breast influences properties of Mom's milk
- * Baby at the breast influences Mom's breastmilk production
- * Skin To Skin (STS) offers many benefits

Early Practices cont'd

- * Early STS
- * Being at breast during gavage feeds (emptied breast)
 - * Encourages NNS association with feeds
 - * Begins association of feeling full and being fed with time at the breast
 - * Leads to cue-based feeding and early breastfeeding prior to discharge
- * Continuing breastfeeding after the start of cur-based feeding and into ad lib feeds

Early Practices cont'd

Oral feeding progression is a dynamic and complex process

Feeding progression must mimic fetal development and experiences

- * Premature infants are developing and gestating outside the womb
- * We are responsible for appropriate gestation
- * We must watch infant cues and readiness and intervene appropriately
- * Following fetal progression supports appropriate developmental outside the womb
- * NICU experiences impact the baby negatively and contribute to changes in brain mapping and outcomes

Baby at the breast influences properties of Mom's milk

The Enteromammary Pathway is responsible for immunity passed on from Mom to Baby

- * Mom inhales baby's "germs" or kisses baby and takes them in
- * This stimulates her immune process to develop antibodies
- * Antibodies are developed specifically for Baby's needs
- * Antibodies are passed into Mom's milk via the Enteromammary pathway
- * Mother's Own Milk (MOM) is specific for her baby's needs

(Wood, L., 2013)

Baby at the breast influences Mom's breastmilk production

Mothers of premature infants are at a higher risk of delayed or failed lactogenesis II

- * Preterm delivery = under developed breast tissue
- * Diminished Prolactin levels in:
 - * Caesarian section Moms
 - * Moms of LPI
- * Add in additional risk factors for delayed Lactogenesis II:
 - * Overweight
 - * Diabetic
 - * Postpartum hemorrhage (≥ 500 mls loss)

(Wood, L., 2014).

Skin To Skin (STS) offers many benefits

- * Neuronal stimulation/Positioning
 - * Upright position
 - * Encourages the beginning of head lift and control
 - * Tummy time for preemies
- * Improves respiratory function
 - * Provides chest wall support
 - * Reduces Apnea/Bradycardia spells
 - * Improved oxygenation (saturations) noted
- * Provides olfactory stimulation
- * Provides thermoregulation
- * Encourages “Safe Zone” & “Place of Comfort”
- * Early breastfeeding behavior

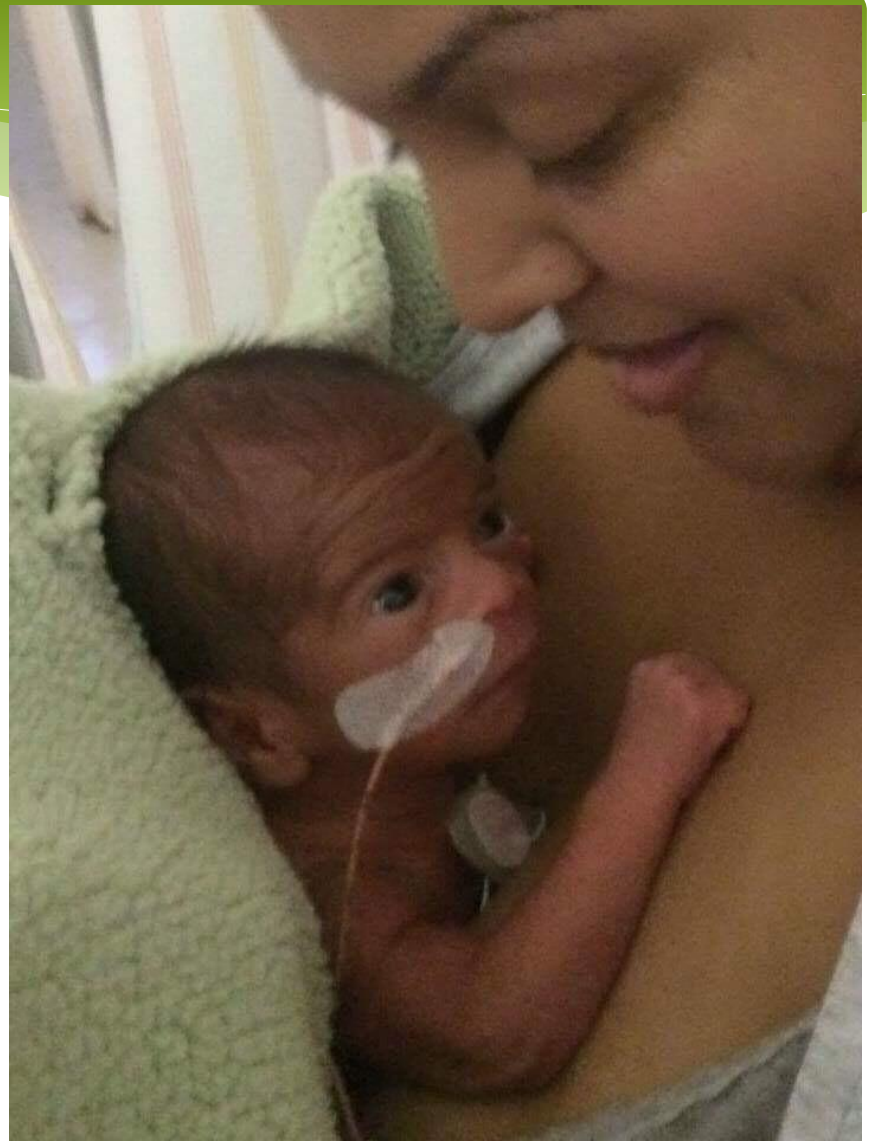
Skin to Skin

In California we have a bench marking group **CPQCC that reports nationally to VON**

- * Latest audit question is “what is the 1st day that STS occurred”
STS on the Ventilator
- * Early STS with a stable ventilated baby is now becoming the norm
- * Easy to do as a standing transfer
- * Minimum time 30 minutes- preferred 1 hour
- * Mom has eaten, been to the bathroom, ready to hold
- * Team of 3 including 1 RT assists mom to pick baby up to her chest, take a step back, and sit and hold STS
- * Improved empowerment and feelings of maternal (parental) capability
- * Early breastfeeding behavior

Standing Transfer of Ventilated Baby

<https://youtu.be/WD2ICM8arok>



STS - Early and Often

- * Ventilated and stable
- * Frequently – every day if possible
- * Mom is very important – Dad can STS too
- * Make it a RN/RT priority
 - * STS is not just a nice thing or a “fluffy” care
- * Team approach to decisions
 - * No one caregiver decides that STS cannot be done
- * Empower parents from the beginning – make this the norm
- * Providers to discuss with parents from the start
- * Make this your unit’s norm – an environment of STS

Engaging the Staff – Competence and Knowledge

- * Unit competency validation
- * Part of new staff orientation
- * Interdisciplinary skill
- * Evidence-based knowledge behind the task
- * This takes time and perseverance to create
- * Unit Leadership, CNS/Education and Providers must agree and support

Oral Care - How

Oral Care with Colostrum and Human Milk is an Important Part of Breastfeeding!

- * Provides immunity
- * Reduces VAP/VAE
- * Provides taste and smell which help to progress infant to oral feeds
- * Colostrum mimics amniotic fluid providing in utero experiences
- * Pairs taste with NNS suck when used with a pacifier
- * Oral care is a must for any:
 - * Ventilated, respiratory support, NPO, or gavaged infant

(Wood, L. 2013)



Oral Care – Competence & Knowledge

- * Evidence-based knowledge is the support for oral care
- * Competency validation for RN and RT staff
- * Double check process for use of Mom's milk
- * Gentle administration following baby's natural sucking and oral movements
- * Make it the norm
- * Educate Mom & Dad (great task for Dad!)
- * Providers to begin discussing at admission or Neo consult!
- * Order sets created for Providers for standardization and ease

(Wood, L., 2013)

Time at the Breast

Each exposure at the breast is building for infant's oral feeding at the breast

- * Continued exposure builds Mom and Baby confidence and comfort
- * Delaying exposure to the breast makes for a nervous Mom
- * STS to NNS at an emptied breast, to IDF at breast vs bottle, to full breast feeds shows a continued progression with better success
- * Increasing time at the breast followed by pumping will protect Mom's milk supply

Non-nutritive Sucking at an Empty Breast



Baby steps to success!
It important that this
be taking place prior to
oral feeds

Breastfeeding and IDF

- * Cue-based follows an assessment guideline that let's the baby tell us he/she is ready for a feed
- * Cue-based sets up relation based care between the infant and the caregiver
- * Establish a protocol
- * Research and identify a tool to determine readiness
- * If baby is “ready” try breastfeeding with Mom instead of a bottle
- * Follow the same infant cues to dictate when to continue and when to stop a feed

Our Criteria...

Baby is ready when the following are demonstrated:

- * Behavioral organization and engagement
- * Cardiorespiratory stability & regulation
 - * HFNC 3 LPM or less
 - * 25% FiO₂
 - * Steady weight gain of 15 gm/kg/day
- * Generally established at 32-34 weeks, we chose 33...

Disadvantages

Prematurely born infants experiences disadvantages when feeding at the breast:

- * Sleepy with short wake periods
- * Tire easily (mimics “I’m done”)
- * Weak suck
- * Can be overstimulated and shut down (mimics “I’m done”)
- * Respiratory disadvantages
- * Positional airway obstruction
- * Decreased muscle tone , oro facial muscles are still developing
- * Uncoordinated oral sucking and movements
- * Disproportion Mom to Baby (nipple to baby’s mouth)

(Walker, M,, 2008)

Breastfeeding Suck vs Bottle Suck

- * Infant's use intra-oral vacuum to remove milk at the breast vs tongue compression with a bottle
- * Infant's are made to use vacuum
- * Preterm infant's may not be able to generate the required vacuum to pull adequate amounts of milk from the breast
- * Nipple shields will assist the baby to stay on the Mom's nipple and increase vacuum
- * This will increase baby's intake while protecting Mom's supply

(Geddes, D. et al, 2018)

Infant Positioning During Time at the Breast

Positions must be carefully considered in the premature infant population

- * Positional airway obstruction
 - * Extreme body flexion is possible
 - * Premature infants have low tone
 - * Airway collapse can occur
 - * Head and shoulders must be in alignment
 - * Ribcage restrictions occur when body is not in alignment
- * Mom's ability to see latch
 - * Ensure that head is not flexed
 - * Baby remain deeply latched on the areola

(Walker, M., 2008)

Cross Cradle

Cross Cradle position is a preferred position for breastfeeding premature infants

- * Better control of infant's body to prevent:
 - * Flexion of the body trunk and neck
 - * Improves alignment of head and mimics modified side lying position
 - * Provides a similar position when infant switches between breast and bottle during transition
 - * Improves rib cage expansion
 - * Decreases airway collapse
 - * Improves swallow response

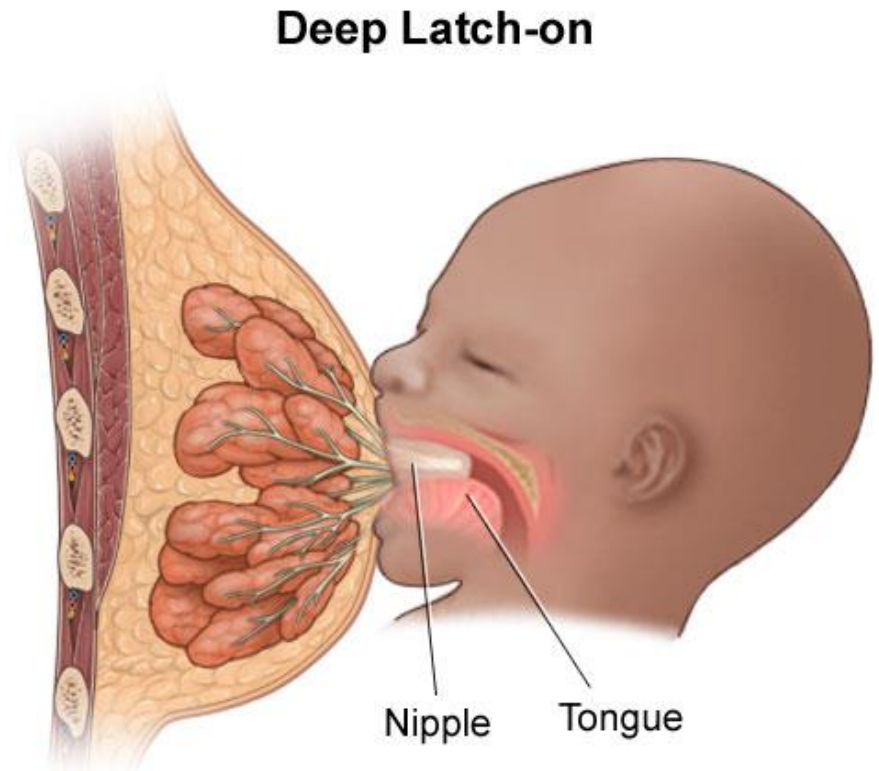
(Walker, M., 2008)





Upright hold

- * Provides Mom a good look at latch
- * May be easier to keep a sleepy baby on the nipple and areola
- * Keeps rib cage straight, body trunk and neck straight
- * Be careful to prevent “slouching” of baby





Dancer Hand Position

- * This position provides support for low tone babies, premature babies transitioning to breast feeding
- * Mom's middle to pinky fingers go under her breast to support the weight
 - * Be sure to keep the weight of the breast off the baby's face
- * The pointer finger and thumb form a U and go under the infant's chin
 - * Be sure to minimize any pressure on the infant's cheeks or jaw



Lastly... a deep latch to improve milk flow and keep baby awake



Engaging Providers & Staff

- * Create policies and protocols to support these endeavors
 - * Obtain all needed supplies prior to roll out
 - * Big recliners!!
- * Present to Leadership and Providers prior to roll out
 - * Get feedback and adjust
 - * Educate and provide evidence-based research to support
- * Find your breastfeeding support people and begin with them as champions

Engagement Cont'd

- * Role out education to everyone
 - * Rational and evidence!
 - * Competencies
 - * Standing transfer
 - * Oral care with colostrum
 - * Breastfeeding positions
 - * Policy
 - * Support from Admin and Providers
- * Answer questions
- * Create as the norm
- * Sustainability requires rounding and auditing!

Engaging Family

- * Empower parents to be involved
- * Set the norm – ask to be involved in these activities if staff are not offering
- * Praise parents!
- * Point out the baby's response to parents
- * As visitation opens up after COVID – educate family and support people

Verbage

- * Begin the talk ASAP!
 - * Pre-admit consults
 - * Provider updates
 - * Nursing/RT parental education and cares
 - * Consistent – shift to shift, day to day
 - * Printed information
- * Providers to begin this conversation
- * Milk as a Medication only Mother can provide
- * Remind Parents at each stage that this is promotion of breastfeeding progressing to time feeding at the breast

Thank You!
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References

Geddes, AD., Koi, C., Nancarrow, K., Hepworth, A. & Simmer, K. (2018). Preterm infant feeding: A mechanism

comparison between a vacuum triggered novel teat and breastfeeding. *Nutrients*. Retrieved from https://pdfs.semanticscholar.org/a3b1/43a670ac5794b5e8685ef09b5acfc060469d.pdf?_ga=2.8174538.809419290.1638138940-1111558037.1638138940

4

- * Ludwig, S. & Waitzman, K. (2007). Changing feeding documentation to reflect infant-driven feeding practice. *Newborn and Infant Nursing Reviews* 7(3) pp. 155-160. Retrieved from <http://www.redesignhealthcare.org/wp-content/uploads/2018/09/dSchool-Ludwig-and-Waitzman-2007.pdf>
- * Meier, P., Aloka, P., Wright, K. & Engstrom, J. (2013). Management of breastfeeding during and after maternity hospitalization for late preterm infants. *Clinical Perinatology* Dec 40(4) pp.689-705. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/24182956/>
- * Seattle Children's (2021). Developmentally Supportive Feeding in the NICU. Retrieved from <https://www.seattlechildrens.org/globalassets/documents/healthcare-professionals/neonatal-briefs/side-lying-feeds.pdf>
- * Wood, L. (2013). Decreasing ventilator associated pneumonia in the neonatal intensive care unit. *neonatal Intensive Care Magazine* Human Milk 2013. Retrieved from <https://nicmag.ca/pdf/Medela-Human-Milk-2013-web.pdf>
- * Wood, L. (2013) Guiding change in the NICU. *neonatal Intensive Care Magazine* 26(2) pp. 26-27. Retrieved from <https://nicmag.ca/pdf/NIC-26-2-MA13-R12-web.pdf>
- * Wood, L. (2014). Increased Maternal Body Mass Index and Overweight: Impacts on Breastfeeding and implications for NICU Staff. *neonatal Intensive Care* 27(3). Retrieved from <https://nicmag.ca/pdf/NIC-27-3-MJ14-R7-web.pdf>