



Jan Tedder, BSN, FNP, IBCLC PO Box 3102, Durham NC 27715 (919) 923-6609
Jan@hugyourbaby.org www.hugyourbaby.org

***Birth, Breastfeeding and Beyond:
Boosting Parent Confidence, Knowledge and Breastfeeding Duration
in a Birth Facility***

Objectives

- Describe three *HUG Zones* (or states) and a newborn's *SOSs* (or physiologic stress responses) and give an example of how this information could enhance breastfeeding.
- List three steps a parent can take to comfort a crying baby and two types of newborn sleep.
- Describe Dr. T. Berry Brazelton's theory of how developmental surges impacts a baby's eating and sleeping
- Give examples of when a child's development (birth to one year) may be misinterpreted as a breastfeeding problem.

Outline

1. **Lesson 1:** Introduction, Effective parent education and Understanding newborn states
 - a. Components of this course: lecture and PowerPoint, parent stories, HUG DVD clips, HUGs Around the World Lullabies, blog or article to read, post-test
 - b. Effective education (Atkinson, 2004)
 - i. Ideas must be clear
 - ii. Ideas should be concrete instead of abstract
 - iii. Ideas should association a new idea with an idea already known and understood
 - c. Understanding "Newborn States" – One key to effective breastfeeding
 - i. a combination of infant behaviors (Brazelton & Nugent, 2011)
 - ii. Begin developing in utero and continue after birth
 - iii. Elements of "States": general body activity, eye movement, facial movement, vocalizing, breathing patterns, responsiveness
 - iv. Six traditional "States": Deep Sleep, Light Sleep, Drowsy, Quiet Alert, Active Alert, Crying
 - v. HUG's Language – "Newborn Zones" [not "states"] (Tedder, 2008)
 1. Resting Zone – sleep states
 2. Ready Zone – ready to eat or ready to play
 3. Rebooting Zone – fussing, crying state
 - vi. **HUG Video on Zones** – demonstration of 3 Zones

- vii. “Almost” Zones – baby between one Zone and another
- viii. Hierarchically ordered, developmental tasks (Karl & Keefer, 2011)
 1. Regulation of autonomic nervous system (heart rate, breathing, temperature)
 2. Motor control – avoiding random, over-responding movements
 3. Zone Regulation – to process and respond to her environment without over-taxing her autonomic nervous system
 4. Social interaction
- ix. Struggling with Zone Regulation showing
 1. Dr. T. Berry Brazelton’s *NBAS* helps us see this issue (Brazelton & Nugent, 2011)
 2. Moves quickly from alert to crying; suddenly from awake to asleep; is easily over-stimulated (Tronick, 2010)
 3. Few self-comforting behaviors (such as moving into the fencing pose, bringing her hand to her mouth, triggering the suck reflex)
- x. More difficulty with Zone Regulation in babies born early, babies with newborn jaundice, or babies with neurological challenges. Such babies change Zones quickly, exhibit no self-comforting behaviors, and are hard to settle (LaRossa, 2017)
- xi. Video -Zone regulation**
- xii. Helpful responses to Zone regulation issues: decrease stimulation, encourage more time skin-to-skin, hold a baby’s hands to chest, gently sway the baby, or encourage sucking (Nugent et al., 2007)

2. **Lesson 2:** Understanding Newborn’s Stress Response to Help Baby Eat Well

- a. Understanding Newborn’s Physiologic Stress Response and help baby breastfeed well (Brazelton & Nugent, 2011)
 - i. *From Neurons to Neighborhoods* (Shonkoff et al., 2012) notes adverse consequences of stress in babies
 1. Increases cortisol
 2. Changes the baby’s brain and negatively impacts the intelligence and emotional health, and development of a child
 3. Lowers threshold for a stress response
 4. Negative outcomes of stressful events can be prevented or reduced by a nurturing and dependable relationship
 - ii. HUG language: “SOS” – Sign of Over-Stimulation
 - iii. **HUG Video on SOS** (Grummer-Strawn, L. M. and Rollins, N. (2015)
 1. Body SOSs: changes in color, breathing and movement
 2. Behavioral SOSs:
 - a. “Spacing Out” – looking less alert
 - b. “Switching Off” – gaze aversion
 - c. “Shutting Down” – moving from alert to drowsy
 3. Responding to an SOS
 - a. Decrease stimulation: quiet voice

- b. Increase support: hold hands to chest, sway baby, encourage sucking
 - iv. Story of adopting family
 - b. Helping Baby Eat Well (AAP, 2017; Bridges, 2016)
 - i. Though breastfeeding is on the rise, some women will need to, or choose to, add formula - Give info on formula preparation, storage and paced feeding
 - ii. **HUG Video on Eating** (Grummer-Strawn, L. M. and Rollins, N. (2015)
 - 1. Breastfeeding is best for baby, mother family
 - a. Best for baby
 - i. Strengthens a baby's immune system, helps prevent childhood illnesses such as respiratory infections and gastroenteritis
 - ii. decreases lifelong illnesses such as asthma, obesity and diabetes in the baby.
 - b. Breastfeeding is best for mother
 - i. Decreased breast and ovarian cancer, less cardiovascular disease and diabetes
 - ii. Lose their pregnancy weight more easily; suffer less from postpartum depression
 - iii. Exclusive breastfeeding significantly increases all these benefits
 - c. Breastfeeding is best for family - miss less work, have fewer medical expenses, and save money
 - 2. Facilitate bonding and breastfeeding
 - a. Bring your newborn to the breast within the first hour, avoid use of a pacifier, and keeping your baby in the room with you
 - b. Avoiding swaddling, and keeping your baby skin to skin
 - i. Increases breastfeeding hormones
 - ii. lowers stress responses in mother and baby
 - iii. helps a mother notice when her baby is ready to eat.
 - 3. Early feeding cues: bringing the hand to mouth, smacking lips, increasing movement
 - 4. Swaddled baby less able to communicate hunger
 - 5. Initial changes in breast and feeding
 - a. Day 1
 - i. breasts do not appear different immediately
 - ii. Colostrum has body-building proteins and antibodies to fight infection; very concentrated;
 - iii. Stomach holds $\frac{1}{2}$ - one teaspoon (2.5-5ml)
 - iv. Learn hand expression
 - b. Day 2 - "Cluster feeding"
 - c. Day 3 - Stomach size of table tennis ball - eats up to one ounce (30 ml)
 - 6. These mothers may have delayed onset milk – obese, thyroid disease, diabetes, c-section, challenging birth

7. Breastfeed 8-12 times a day
 8. Help mother differentiate her baby's "going to sleep" from "Shutting Down" [squeezing eyes shut, tension around mouth and eyes, face color not uniform] (Karl, 2004)
 9. CCK (cholecystokinin) hormone relaxes the mother and can cause newborns to get sleepy while nursing; put baby skin-to-skin and baby will likely awake in 10 minutes to complete meal (Riodan & Wambach, 2009).
 10. Evidence of adequate milk supply
 - a. baby regains her birth weight by two weeks of age
 - b. baby continues to gain 4-7 ounces a week
 - c. baby has several wet diapers and 3-6 stools a day
 - iii. Prenatal and postpartum care impacts breastfeeding success
3. **Lesson 3: Understanding infant crying and sleep promotes breastfeeding**
- a. Helping a Crying baby
 - i. Crying in baby associated with child abuse and neglect (Simonnet, et al. 2014).
 - ii. Babies who cry excessively as infants show increased behavioral and emotional problems as 2-3-year-olds (Papousek et al., 2008).
 - iii. Mothers may add formula, add solids prematurely or abandon breastfeeding to reduce a baby's crying (Kaley et al., 2012).
 - iv. Giving parents skills to help a crying baby will decrease crying and increase parent confidence (Radesky et al., 2013)
 - v. Help parents recognize early SOSs
 - vi. **HUG Video on Calming**
 1. Normal increase in crying at 2 weeks of age, peaks at 6 weeks and decreases by 12 weeks; increased crying at 4 weeks if baby born 2 weeks early.
 2. Crying in a newborn – initially consider hunger as the cause
 3. Respond with skin-to-skin, which increases milk supply and decreases crying (Bergman & Bergman, 2013)
 4. What "TO DO"
 - a. "T" – Talk in a quiet, melodic, repetitive voice
 - b. "O" – Observe for signs of self-soothing (brings hand to mouth, sucks fingers, moves into fencing pose)
 - c. "DO" – hands to chest, sway baby, baby wearing and baby to breast
 5. Swaddling newborn may decrease breastfeeding. May swaddle older baby
 - vii. Swaddling is controversial (Van Sleuwen, 2007)
 1. Lactation Consultants caution against swaddling newborn (Eldelman & Schanler, 2012; Dumas et al., 2013)
 2. Benefits of skin-to-skin confirmed (Bergman & Bergman, 2013)
 3. Teach about safe swaddling of older baby: (Van Sleuwen, et al., 2007; International Hip Dysplasia Institute, 2014; Horne, 2014)
 - viii. Pacifier use is controversial.

1. Pacifier use may decrease infants' drive to eat
 2. AAP- pacifier only once breastfeeding is well established (Jaafar, et al., 2012)
- b. Helping the baby sleep well
- i. Sleep patterns develop first few weeks of baby's life (Hiscock, et al., 2014)
 - ii. **HUG Video on Sleep**
 1. Still/Deep sleep – totally still, deep regular breathing, no movement
 2. Active/Light sleep – some movement, eyes flash open, irregular breathing, vocalizing
 3. Important brain development occurs as the baby moves from one sleep cycle to another (Ask Dr. Sears, 2016).
 4. Wiggling in newborn is an early sign of hunger
 5. Wait to see if older baby transitions from Active/Light back to Still/Deep sleep
 - iii. Full-term babies: 60% Active/Light sleep, 40% Still/Deep sleep (Cook et al., 2016). Premature and late term babies spend more time in Active/Light sleep
 - iv. Each Active/Light and Still/Deep sleep last 40 minutes in infants and 90 minutes in adults
 - v. Newborns wake when they shift from one sleep state to another. Over a few weeks babies group cycles to sleep longer
 - vi. Infants spend about 20 minutes in Active/Light sleep before drifting into Still/Deep sleep. Adults go directly into Still/Deep sleep
 - vii. Awake a fragile or jaundiced baby from Active/Light not Still/Deep sleep
 - viii. **Video- mother's experience with active sleep**
4. **Lesson 4:** Understanding infant capabilities and how child development impacts baby and breastfeeding (birth to one year)
- a. Infant capabilities
 - i. Studies continue to explore important connections between parent-child interaction, infant brain development, and later cognitive and emotional growth (Shonkoff et al., 2012; Nugent, 2013)
 - ii. When newborn sees parent baby's endorphins are released into baby's brain, which arouses baby (Stern, 2010)
 - iii. Help parents spot SOS and find a balance between this arousing/sympathetic system, and the calming/parasympathetic system.
 - iv. Interplay between parent and child is the basis of bonding; sets the stage for successful social, emotional, and intellectual growth (Tronick, 2010)
 - v. Helping a parent see baby turn to her face or look at a toy enhances parent confidence and bonding
 - vi. Some babies cannot pay attention and control their body at same time. Swaddling can help
 - vii. **HUG Video-Playing with baby**
 1. Face to face interaction is necessary for healthy brain development.
 2. Steps to orienting: becomes quiet and still; turns toward parent; turns toward and looks at parent

3. Babies focus best 10 inches from their face
 4. Babies respond to feelings of family
 5. Imaging of a baby's brain confirms that even young babies respond positively to seeing loving affection.
- b. Child development impacts feeding: *The Roadmap to Breastfeeding Success* (Tedder, 2015)
- i. Breastfeeding is on the rise, but breastfeeding duration does not meet WHO international goals: exclusive for 6 months and to continue (with complementary foods) to 2 years (WHO, 2018)
 - ii. Demographic, social, psychological and biologic issues well documented (Tharner et al., 2012, Thulier et al., 2009; Labbok et al., 2013; Stuebe, A. & Bonuck, 2011; McKelvey, 2013; Goldberg, 2013; Farrow, 2015; Bridges, 2016; Stuebe, et al., 2014; Neifert & Bunik, 2013)
 - iii. Often overlooked variable impacting breastfeeding is mother misunderstanding baby's normal behavior
 - iv. Mothers discontinue breastfeeding when they misunderstood their baby's normal behaviors such as
 1. A newborn who looks away from his mother
 2. Increased crying at two-weeks-old
 3. Difficult to wake up for feeding
 4. The restless sleeping of a one-month-old
 5. The distracted four-month-old who looks like she wants to wean
 6. Or, frequent awakenings at night with separation anxiety kicks in or a baby begins to walk
 - v. *Infant Feeding and Practice Study II* (Li et al., 2008) – baby not satisfied at all ages – Identify Issues impact mother's belief that baby is not satisfied;
 1. Baby's temperament - babies with more difficult temperamentsⁱ or with Zone Regulation issues, are significantly less likely to be exclusively and predominately breastfed.
 2. Lack of information about how normal child development impacts breastfeeding.
 - vi. *Touchpoints* by Dr. T. Berry Brazelton (Brazelton & Sparrow, 2006)
 1. A surge in a baby's development temporarily **DISRUPTS** a baby's eating and sleeping.
 2. *Touchpoints* are predictable
 - vii. Cochran article highlights need to provide proactive, ongoing education and support (Renfrew et al., 2012;)
 - viii. Lead to development of *The Roadmap to Breastfeeding Success* that includes: Roadmap handout or poster, HUG DVD, HUGs Around the World Lullabies, E-Newsletters (HUG Your Baby Lullabies, 2015; HUG Your Baby Research, 2018, Patnode, 2016).)
5. **Lesson 5:** Child development and breastfeeding: Prenatal to 4-Months-Old
- a. Prenatal: Education boosts parent confidence and increases breastfeeding
 - i. Help parents understand Newborn Zones and SOSs
 - ii. Understand "SOS: Signs of Over-Stimulation" (HUG DVD-SOS):

- iii. Identify personal and professional connections; Establish specific breastfeeding goals; Discuss childbirth choices (Labbok et al., 2013; Bergman & Bergman, 2013)
- iv. **Video of reading baby's body language**
- b. Birth: WHO BFHI: Breastfeed first hour' only breast milk; no pacifiers (Nickel et al., 2013)
- c. Two-Week-Old: increased crying begin at 2-weeks
- d. One-Month-Old:
 - i. Learn to differentiate Active/Light vs. Still/Deep sleep
 - ii. Awaken a jaundiced or fragile newborn from active sleep
 - iii. Breast milk changes: at 4-6 weeks there is change from 90:10 whey/casein ratio to 50:50 – decreases frequency of stooling; Between 4-6 weeks postpartum, breasts do not feel empty and full as before (Bonyata, 2011; Kendall-Tackett, K. (2014). **Video mother explaining breast changes**
- e. Working and breastfeeding
 - i. Full review of this beyond scope of course
 - ii. Refer to *Business Case for Breastfeeding* (US Dept of HHR, 2018)
 - iii. **Video of breastfeeding, working mother**
- f. Four-Month-Old
 - i. Surge in cognitive development causes increased distractibility - have quieter feeding; less side conversations; focus on baby (Brazelton & Sparrow, 2006)
 - ii. **Video 4-month-old**
 - iii. Four-month growth spurt from 4-6 ounces more breast milk per day
 - iv. Rolling over developmental surge changes eating and sleep pattern;
 - v. Recommendation is to delay solids until six months due to: intestines will "close"
 - vi. Breast milk meets all baby's nutritional needs until solids at 6 months
- 6. **Lesson 6:** Child Development: 6-months-old to one year and Integrating HUG into your work
 - a. Six-Months-Old – Getting a tooth - Prevent biting: Take tired, satisfied, or bored baby off breast; Use proper latch;
 - b. Nine-Months-Old - Separation Anxiety develops as object permanence develops; causes nighttime awakening.
 - c. Twelve-Month-Old: Starting to walk causes nighttime awakening (Brazelton & Sparrow, 2006) **Video surge at 12 months**
 - d. Conclusion- Review key points
 - i. Resting, Ready and Rebooting Zones and how babies exhibit zone regulation by moving smoothly between Zones and bringing hand to mouth.
 - ii. Body or behavioral SOS when an overstimulated breastfeeding baby squeezes her eyes shut. Put baby skin to skin
 - iii. Teach mother to hand-express colostrum or breast milk
 - iv. Teach signs of having an adequate milk supply including: appropriate number of stools the first week of his life; regaining birth weight by two weeks of age and then, continuing to gain one-half to one once a day after reaching his birth weight.

- v. Babys' stool count will drop when her breastmilk's casein/whey ratio changes between 4 to 6 weeks.
- vi. CCK hormone makes a newborn briefly sleepy after nursing. Skin-to-skin encourages her to wake up to finish her meal.
- vii. Normal increase in crying at 2 weeks of age.
- viii. Active/Light sleep- Wake up a fragile or early baby from Active sleep, rather than from Deep sleep, for feeding.
- ix. Face-to-face interaction promotes both emotional and intellectual development,
- x. Dr. Brazelton's Touchpoint Theory: babies become temporarily disorganized in their eating and/or sleeping at times of a developmental surge.
- xi. The *Roadmap to Breastfeeding Success* handout and The HUG E-Newsletters describe these developmental surges—and help parents anticipate, and problem-solve, around these predictable events.

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