



Jan Tedder, BSN, FNP, IBCLC

PO Box 3102, Durham, NC 27715 USA 1+ (919) 923-6609

Website: <https://hugyourbaby.org/> Email: jan@hugyourbaby.org

The Roadmap to Breastfeeding Success: Teaching Child Development to Extend Breastfeeding Duration

Disclosure:

- Jan Tedder researched and developed, and is president of, HUG Your Baby. She affirms support of the World Health Organization (WHO) International Code of Marketing of Breast-Milk Substitutes.

Course Objectives – At the end of this program you will be able to:

- List the benefits of breastfeeding to baby, parent, and community.
- Describe the World Health Organization’s (WHO) recommendations for breastfeeding duration.
- Describe Dr. T Berry Brazelton’s *Touchpoints* theory and its potential impact on breastfeeding.
- Describe developmental events impacting breastfeeding from birth to one year.
- Describe three content items in the Digital Parent Resource Page.

1. LESSON ONE: Introduction (Human Lactation Center, 2023)

- a. Though breastfeeding initiation is on the rise, mothers still not meeting their breastfeeding goals (CDC [Report Card], 2023)
- b. Overlooked variables impacting breastfeeding:
 - i. Misunderstanding normal child develop and behavior: gaze aversion, increased crying, hard to wake up, restless sleep, distracted while breastfeeding, frequent awakening at night (Wood et al., 2023; Heinig, 2022; Tedder, 2008; Brazelton & Sparrow, 2006)
 - ii. Misunderstanding normal changes in milk production
- c. Components of this program

2. LESSON TWO: Variables impacting breastfeeding

- a. Benefits of breastfeeding to baby, mother and community (CDC. [Why it matters], 2023; WHO, 2023; Walters, 2019)
- b. WHO International goals (exclusive for 6 months and continue to 1-2 years), rates of breastfeeding, and financial costs of not breastfeeding (Walters, 2019; WHO, 2023)
- c. Systems issues: Need for proactive ongoing support (Jaynes et al., 2022; Pezley et al., 2022)
- d. Misunderstanding normal behavior and belief that baby is not satisfied cause women to stop breastfeeding; correlates with *Infant Feeding and Practice Study II* (Li et al., 2008; Wood, 2023)
- e. Influence of temperament: Children with more difficult temperaments or with State Regulation issues less likely to be exclusively and predominately breastfed (Herron, 2019; Tedder, 2022; Kielbratowska, 2015; Brazelton, 2010)
- f. Mothers with difficult baby and who believe they can “spoil her baby” have less breastfeeding duration (Mathews et al., 2014)
- g. State Regulation
 - i. Six traditional newborn states (Brazelton & Nugent, 2011)
 - ii. HUG Your Baby “Zones” rather than “states” (Tedder, 2008)
 1. The Resting Zone: all the sleeping states
 2. The Ready Zone: the alert state, when a baby is ready to eat or to interact
 3. The Rebooting Zone: the fussing or crying state

- iii. HUG DVD for Parents – “Zones” (HUG Your Baby, 2023)
- iv. Helping baby with Zone Regulation issues: decrease stimulation, encourage skin to skin, hold baby’s hand to chest, swaddle or encouraging sucking
- h. Dr. T. Berry Brazelton’s *Touchpoints* theory: predictable changes in baby’s eating sleeping or general behavior at times of developmental surges (Brazelton & Sparrow, 2006; BTC, 2023)

3. LESSON THREE: *The Roadmap’s First Steps along the Way*

- a. Prenatal: Education boosts parent confidence and increases breastfeeding
 - i. Understand “SOS: Signs of Over-Stimulation” (Tedder, 2008)
 - 1. Changes in Body: movement, color and breathing
 - 2. Changes in Behavior: “Spacing Out” – going from alert to drowsy state; “Switching Off” – gaze aversion; “Shutting Down” – going from alert to sleep state
 - ii. Identify personal and professional support; Establish specific breastfeeding goals; Discuss childbirth choices
- b. Birth:
 - i. WHO BFHI: Breastfeed first hour’ only breast milk; no pacifiers (WHO, 2023)
 - ii. Controversy about pacifiers (avoid until breastfeeding established; may decrease SIDS) (Moon et al., 2022; Jaafar, 2016; Batista, 2018)
 - iii. Supplementation for medical reasons did not impact breastfeeding if this is short term and a plan to resume (Chantry, 2013)
 - iv. Avoid skipping nighttime feedings: Prolactin level is higher at night; Increase FIL (as breast get full) will decrease breastfeeding (Mohrbacher, 2011)
 - v. HUG Video on “Helping baby eat well”: WHO recommendations, early feeding cues, volume of initial intake, going to sleep vs SOS, CCK, evidence of adequate breastmilk
 - vi. Awaken sleepy baby from Active/Light rather than Still/Deep sleep

4. LESSON 4: *The Roadmap’s 2-Week, 1-Month*

- a. The Two-Week-Old (Brazelton & Sparrow, 2006; BTC, 2023)
 - i. Excessive crying associated with child abuse contributes to increased postpartum depression and less breastfeeding; change to formula or add solids prematurely to decrease crying (Crouch et al., 2023; Oberlander, 2019)
 - ii. Impact of increasing mother confidence to manage crying
 - iii. AAP’s review paper on swaddling (Dixley & Ball, 2023; Moon et al., 2022; AAP [Swaddling], 2022)
 - iv. Evidence breastfeeding is well established when baby: has regained birth weight; is then gaining 5-7 oz (140-190 grams) per week; has 6 stools per day
 - v. Safe swaddling: bend the baby’s knees upward and rotating them outward; Do not swaddle tightly; Monitor the baby’s temperature; Never put a swaddled baby in a prone position; Discontinue swaddling when baby can roll - typically at 3-4 months (International Hip Dysplasia Institute, 2023)
 - vi. Expect two-week growth spurt with increase in milk from 16-24 ounces (475-700 ml)/day
 - vii. HUG Video - increased crying begin at 2-weeks, peaks 6 weeks; “TO DO - talk, observe hand to mouth, fencing; hands to chest, sway, wear baby or to breast; temporary swaddling
 - viii. HUGs Around the World Lullaby (HUG Your Baby, 2023)
- b. Expect two-week growth spurt with increase in milk from 16-24 ounces (475-700 ml)/day
- c. *The Roadmap’s One-Month: Sleep*
 - i. Active/Light sleep – wiggling, eyes open, mouthing, vocalizing; Still/Deep sleep – body is still, has deep/regular breathing (Kendall-Tackett, 2014; Middlemiss & Kendall-Tackett, 2014)
 - ii. Infant cycles are 40 minutes (adults are 90 minutes); infants enter Active/Light before moving to Still/Deep sleep
 - iii. HUG Video – Still and Deep sleep, feeding cues vs active sleep, mother’s story
 - iv. Breast milk changes: at 4-6 weeks there is change from 90:10 whey/casein ratio to 50:50 – decreases frequency of stooling (Wambach & Riordan, 2019); Between 4-6 weeks postpartum, breasts do not feel empty and full as before (Bonyata, 2023)

5. **LESSON FIVE: *The Roadmap's Working, 4-Months & 6-Months*** (Zero to Three, 2023)
 - a. Working is associated with decreased breastfeeding duration; providing breast milk causes less missed work and improved job retention (USDHHS, 2021)
 - i. Refer to *Business Case for Breastfeeding* (USDHHS, 2021)
 - ii. Approach to “reverse night feeding” when calories shift from day to night: “Mommy and Me time”; “Stock up” in evening; decrease the time breastfeeding by half every few nights; practice nighttime comforting techniques (KellyMom, 2023)
 - iii. Video- working mother of twins
 - b. Four-Month
 - i. Increased distractibility: have quieter feeding; less side conversations; focus on baby (Brazelton & Sparrow, 2006; BTC, 2023; Wonder Weeks, 2023)
 - ii. Four-month growth spurt from 4-6 ounces more breast milk per day; Rolling over developmental surge changes eating and sleep pattern;
 - iii. Recommendation is to delay solids until six months due to: intestines will “close”; tongue thrust reflex resolves; swallowing matures; brings everything to mouth; sits well; imitates (CCD [solids], 2023)
 - c. Six-Month – Getting a tooth (ADA, 2023)
 - i. Prevent biting: Take tired, satisfied, or bored baby off breast; Use proper latch
 - ii. Breastfeeding protects teeth due to: natural antibiotic, no pooling near teeth & healthy pH
 - iii. Use WHO growth charts for breastfeeding babies
6. **LESSON SIX: *The Roadmap's Nine- and Twelve-Months and HUG Resources*** (Zero to Three, 2023)
 - a. Nine-Months
 - i. Early Stranger Anxiety seen as “Social Referencing”
 - ii. Separation Anxiety develops as object permanence develops; causes nighttime awakening. Comfort back to sleep; use lovey; no extra calories needed (Brazelton & Sparrow, 2006; BTC, 2023; Wonder Weeks, 2023)
 - b. Twelve-Month:
 - i. Starting to walk causes nighttime awakening (Brazelton & Sparrow, 2006; BTC, 2023; Wonder Weeks, 2023)
 - ii. Mother may comfort baby without additional breastfeeding at night
 - c. HUG Resources (HUG Your Baby, 2023)
 - i. Parent video: *Understanding and Caring for your Newborn*: helps parents read baby’s body language and prevent and solve problems around baby’s eating, sleeping crying and attachment.
 - ii. *Understanding and Caring for your Newborn* handout reviews key elements of parent video
 - iii. *Roadmap to Breastfeeding Success* handout: Depicts and describes when developmental events occur that may be misunderstood as a breastfeeding problem
 - iv. *Digital Parent Resources* page for individual professionals and larger organizations in English and Spanish
 1. Includes all of the above plus:
 - a. 11 videos addressing key information in *Roadmap to Breastfeeding Success* graphic
 - b. E-Newsletter series (birth to one year) offering family stories, key information and video clips about child development and breastfeeding tips
 - c. *HUGs Around the World Lullabies* on helping a father calm his baby and WHO 10 steps to breastfeeding success
7. **LESSON SEVEN: Research and Using HUG Your Baby in your Practice**
 - a. Research:
 - i. Professionals who took the HUG online course showed an increase in their understanding of newborn behavior and their confidence to teach parents (Tedder, 2012; Shimpuku & Tedder, 2013).
 - ii. Nursing students broadened understanding on newborn behavior and increased confidence (Alden, 2018; Teague & Trotter, 2023)

- iii. Lactation specialist (at WIC) enhanced knowledge of how child development impacts breastfeeding, increased intention to teach about development & would recommend course (Tedder & Quintana, 2018; Wagner et al., 2022)
 - iv. Fathers with baby in NICU received HUG information demonstrated enhanced knowledge of infant behavior (Kadivar & Mozafarinia, 2013)
 - v. Mothers in Special Care Nursery receiving HUG teaching reported less maternal anxiety and more confidence (Hunter, 2018)
 - vi. Japanese mothers with HUG teaching had decreased postpartum depression, lower anxiety & reduced risk for child abuse (Shimpuku et al, 2022)
 - vii. Expectant mothers who received HUG information in a childbirth education class increased their confidence to meet their breastfeeding goals (Rippe, 2020).
- b. Incorporating HUG into your practice
- i. Prenatal Educators and lactation specialists use *Roadmap* in curriculum
 - ii. Hospital include HUG video into newborn channel and in discharge teaching of full-term and Late Pre-term Infants (Costa et al, 2023)
 - iii. Zoom prenatal classes and Mothers Meet Up

Bibliography

- Alden, K. (2018). A Web-based Module to Enhance BSN Students' Knowledge and Confidence in Teaching Parents about Newborn Behavior. *Journal of Perinatal Education*, 27(2), 104-114.
- AAP. (2023). Getting your baby to sleep. Retrieved from <https://www.healthychildren.org/English/ages-stages/baby/sleep/Pages/Getting-Your-Baby-to-Sleep.aspx>
- AAP. (2022). Swaddling: Is it safe: Retrieved from <https://www.healthychildren.org/English/ages-stages/baby/diapers-clothing/Pages/Swaddling-Is-it-Safe.aspx>
- ADA [American Dental Association]. (2023). Breastfeeding: 6 things nursing moms should know about dental health. Retrieved from <https://www.mouthhealthy.org/en/az-topics/b/breastfeeding>
- Batista, C., Ribeiro, V., Nascimento, M. & Rodrigues, V. (2018). Association between pacifier use and bottle-feeding and unfavorable behaviors during breastfeeding. *Jornal de Pediatria*, Nov 12.
- Bonyata, K. (2023). My breasts feel empty! Has my milk supply decreased? Retrieved from <http://kellymom.com/bf/got-milk/supply-worries/breast-fullness/>
- Brazelton, T. & Nugent, K. (2011). *The Neonatal Behavioral Assessment Scale*. London: Mac Keith Press.
- Brazelton, T. & Sparrow, J. (2006). *Touchpoints: Birth to 3*. New York, NY: Perseus.
- Brazelton Touchpoints Center [BTC]. (2023). Retrieved from <http://www.brazeltontouchpoints.org/>
- Brazelton, T. (2010). *Infants and Mothers: Differences in development*. New York: Random House.
- Centers for Disease Control [CDC]. (2023). Breastfeeding: Why it matters. <https://www.cdc.gov/breastfeeding/about-breastfeeding/why-it-matters.html>
- Centers for Disease Control [CDC]. (2023). *Breastfeeding Report Card*. Retrieved from <https://www.cdc.gov/breastfeeding/data/reportcard.htm>
- Centers for Disease Control [CDC]. (2023). When, what, and how to introduce solid foods. Retrieved from <https://www.cdc.gov/nutrition/infantandtoddlernutrition/foods-and-drinks/when-to-introduce-solid-foods.html>
- Chantray, C., Dewey, K., Peerson, J., Wagner, E. & Nommsen-Rivers, L. (2013). In-hospital formula use increases early breastfeeding cessation among first-time mothers intending to exclusively breastfeed. *Journal of Pediatrics*, 164(6), 1339-45.
- Costa, B., Mozafarinia, M., Soehartojo & Tedder, J. (2023). International, virtual resources and outreach to enhance care of the Late Preterm Infant. *International Journal of Birth and Parent Education*, 10(4), 3-7.
- Crouch, J., Bridgett, D., Milner, J., Cote, K., Lelakowska, G., Davila, A., McKay, E. & Savoree, S. (2023). Prolonged infant crying: Caregiving Quality and Child Physical Abuse Risk. *J Interpers Violence*. 38(3-4), 3298-3320.
- Dixley, A. & Ball, H. (2023). The impact of swaddling upon breastfeeding: A critical review. *Am J Hum Biol*, 35(6), 223878.
- Heinig, J. (2022). *Understanding baby's behavior*. Retrieved from https://video.ucdavis.edu/media/Dr+Jane+Heinig+Presents+%22Understanding+Your+Baby%22/1_vvfcn29o/21_3314233

- Herron, A., (2019). *Suckle, Sleep Thrive: Breastfeeding success through understanding your baby's cues and unique temperament*. Amarillo, TX: Praeclarus Press.
- HUG Your Baby. (2023). Retrieved from <http://hugyourbaby.org/>
- Human Lactation Center. (2023). Retrieved from <https://lactation.ucdavis.edu/>
- Hunter, L., Blake, S., Simmons, C., Thompson, J. & Derouin, A. (2018). Implementing a parent education program in the Special Care Nursery. *Journal of Pediatric Health Care*, 33(2), 131-137.
- International Hip Dysplasia Institute. (2023). Retrieved from <http://hipdysplasia.org/developmental-dysplasia-of-the-hip/hip-healthy-swaddling/>
- Jaafar, S., Ho, J., Jahanfar, S & Angolkar, M. (2016). Effect of restricted pacifier use in breastfeeding term infants for increasing. *Cochrane Database Systematic Review*. Aug 30 (8).
- Jaynes S., Brathwaite D., Tully, K. (2022). Systematic review of the effect of technology-mediated education intervention on maternal outcomes in the first year after birth. *JOGNN*, 51(3) p278-289. DOI: <https://doi.org/10.1016/j.jogn.2022.02.005>
- Kadivar, M. & Mozafarina, M. (2013). Supporting fathers in a NICU: Effects of the HUG Your Baby program on father's understanding of preterm infant behavior. *Journal of Perinatal Education*, 22(2), 113-119.
- KellyMom. (2023). *Reverse cycling*. Retrieved from <http://kellymom.com/bf/normal/reverse-cycling/>
- Kendall-Tackett, K. (2014). Sleep disturbances: Why sleep issues won't just go away. *Clinical Lactation*, 5(4), 113-114.
- Kielbratowska, B., Kazmierczak, M., Michalek, J. & Preis, K. (2015). Temperament and the mother-infant dyad: Associations with breastfeeding and formula feeding with a bottle. *Infant Mental Health Journal*, 36(3), 243-352.
- Li, R., Fein, S., Chen, J., & Grummer-Strawn, L. (2008). Why mothers stop breastfeeding: Mothers' self-reported reasons for stopping during the first year. *Pediatrics*, 122, S69-76.
- Mathews, M., Leerkes, E., Lovelady, C. & Labban, J. (2014). Psychosocial predictors of primiparous breastfeeding initiation and duration. *Journal of Human Lactation*, 30(4), 480-487.
- Middlemiss, W., & Kendall-Tackett, K. (2014). *The Science of Mother-Infant Sleep*. Amarillo, TX: Praeclarus Press.
- Mohrbacher, N. (2011). The magic number and long-term milk production. *Clinical Lactation*, 2(1), 15-18.
- Moon, R., Carlin, R., Hand, I., The Task Force on SIDs and the Committee on Fetus and Newborn. (2022). Sleep-Related Infant Deaths: Updated 2022 Recommendations for Reducing Infant Deaths in the Sleep Environment. *Pediatrics*, 150(1), e2022057990.
- Oberlander, T. & Rotem-Kohavi, R. (2019). Post-partum depression and infant crying behavior. *Encyclopedia on Early Childhood Development [online]*, Dec. 27, 2019.
- Pezley, L., Cares, K., Duffecy, J., Koenig, M., Maki, P., Odoms-Young, A., Clark, M. et al. (2022). Efficacy of behavioral interventions to improve maternal mental health and breastfeeding outcomes: a systematic review. *Int Breastfeed J*, 17(1), 67.
- Rippe, M. (2020). Addressing prenatal breastfeeding self-efficacy and advancing the Baby-Friendly Hospital Initiative with HUG Your Baby curriculum. *Carolina Digital Repository*, April.
- Shimpuku, Y. & Tedder, J. (2103). HUG Your Baby: Evidence-based support tool for early child rearing. *Japanese Journal of Nursing Education*, 54(12), 1114-1118.
- Shimpuku, Y., Iida, M., Hirose, N., Tada, K., Tsuji, T., Kubota, A., Senba, Y., Nagamori, K. and Horiuchi, S. (2022) Prenatal education program decreases postpartum depression and increases maternal confidence: A longitudinal quasi-experimental study in urban Japan. *Women and Birth*. 35(5), e456-e463.
- Teague, M. & Trotter, K. (2023). HUG Your Baby. Preparing nurse practitioner students to support breastfeeding. *Jo of NP*, 19(2).
- Tedder, J. (2008). Give The HUG: An innovative approach to helping parents understand the language of their newborn. *Journal of Perinatal Education*, 17(2), 14-20.
- Tedder, J. (2012). Teaching for birth and beyond: Online program incorporated into a birthing and parenting certification. *International Journal of Childbirth Education*, 27(3), 65-68. <http://www.hugyourbaby.org/Home/research>
- Tedder, J. & Quintana, E. (2018). Online education for WIC professionals: Teaching child development to extend breastfeeding duration. *Clinical Lactation*, 9(3), 108-118.
- Tedder, J. (2022). The secret life of a nursing strike. [online course]. Retrieved from <https://hyb.digitalchalk.com/learn/the-secret-life-of-a-nursing-strike-childs-development-child-temperament-and-breastfeeding-duration>

Tolppola, O., Renko, M., Sankilampi, U., Kiviranta, P., Hintikka, L. & Kuitunen. (2022). Pacifier use and breastfeeding in term and preterm newborns – a systematic review and meta-analysis. *Eur J Pediat.* 181(9), 3421-3428.

United States Department of Health and Human Services [USDHHS]. (2021). *The Business Case for Breastfeeding*. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General.

Wagner, G., Stevenson, E., Derouin, A. and Tedder, J. (2022). Evaluating the Implementation of the online HUG Your Baby course “Roadmap to Breastfeeding” for Nevada WIC Professionals. *Journal of Perinatal Education*, 31(3):1-11.

Walters, D., Phan, L. & Mathisen, R. (2019). The cost of not breastfeeding: global results from a new tool. *Health Policy and Planning*, 24, 4070417.

Wambach, K. & Riordan, J. (2019). *Breastfeeding and Human Lactation*. Sixth edition. Burlington, MA: Jones & Bartlett.

Wonder Weeks. (2023). Retrieved from <https://www.thewonderweeks.com/about-the-wonder-week-app/>

Wood, N. Barbosa-Leiker, C. & Odom-Maryon, T. (2023). Determinants of exclusive direct breastfeeding using constructs from the relationship breastfeeding scale. *J Reprod Infant Psychol*, Mar 20, 1-15.

World Health Organization [WHO]. (2023). *Exclusive breastfeeding*. Retrieved from http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/

Zero to Three. (2023). *Behavior and Development*. Retrieved from <http://www.zerotothree.org/child-development/>



© HUG Your Baby 2024