



Every Change Matters:™ Bridging Developmental Diapering Practices From Hospital to Home

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Learning Objectives

1. Discuss two or more ways diapering can impact the physiological state of an infant and/or parent
2. List the five focus areas of developmental diapering care
3. Provide at least one example of how developmental diapering care can be taught to parents and encouraged to model by healthcare professionals in the hospital setting

Meet the Presenters...



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Every Change Matters™:

A Guide to Developmental Diapering Care

- The Huggies® Nursing Advisory Council has identified diapering as an extraordinary opportunity to improve outcomes for preterm and full-term infants
 - Developmental care measures can be integrated into routine care task of diapering
 - Diapering provides an ideal opportunity for parents to bond with and better understand their infant
- *Every Change Matters™: A Guide to Developmental Diapering Care*, is the first review to consider diapering within the context of developmental care
- Provides guidance on how developmental care can be applied to routine care such as diapering to decrease infant stress and provide an opportunity for parent/infant bonding

Every Change Matters: How Was It Developed?

PubMed search of
>80 diaper-related
terms

Over 400 articles
analyzed

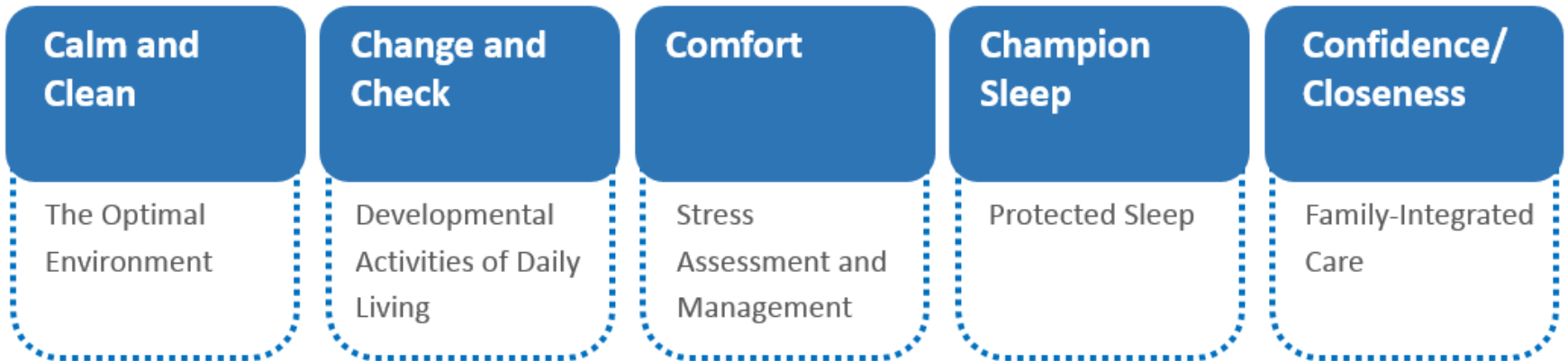
Manuscript
includes ~ 130
citations

Four detailed
revisions

- Heavily referenced AWHONN's Neonatal Skin Care: Evidence-Based Clinical Practice Guidelines, complemented by new areas
- Found that majority of existing research focuses on prevention, diagnosis and resolution of diaper dermatitis, and on research related to diapering, diapers and baby wipes
- Emphasized that standard caretaking procedures like diapering can lead to increased stress responses in full term and premature infants
- Established that a need exists in the literature for a document that discusses diapering in a holistic manner

Developmental Care: The Five Alliterative “Cs”

Based on the developmental care model includes five areas of focus that can be applied toward diapering of premature and full term infants:



Calm and Clean: Background



- Among the many negative consequences associated with an unhealthy early environment are childhood development of tactile vulnerability and hearing impairment^{1,2}
- Conversely, a developmentally appropriate environment in which potentially harmful environmental exposures are controlled and positive sensory experiences are provided is associated with infant self-regulation^{3,4}

1. Wachman EM, Lahav A. The effects of noise on preterm infants in the NICU. *Arch Dis Child Fetal Neonatal Ed.* 2011;96:F305-F309.

2. Weiss SJ, Wilson P. Origins of tactile vulnerability in high-risk infants. *Adv Neonatal Care.* 2006;6:25-36. 3. Altimier L. The neonatal intensive care unit (NICU) environment. In: Kenner CM, Lott JD, eds. *Comprehensive Neonatal Care: An Interdisciplinary Approach 4th ed.* St. Louis, MO: Saunders Elsevier; 2007. 4. Als. Toward a synactive theory of development: promise for the assessment and support of infant individuality. *Infant Mental Health Journal.* 1982;3:229-243.

Calm and Clean: Interventions

To promote an optimal diapering environment:¹

Ensure infant safety and comfort

Use appropriate sanitation and hygiene measures

Practice mindfulness (use the 5-second rule)

Provide caregiving based on infant cues

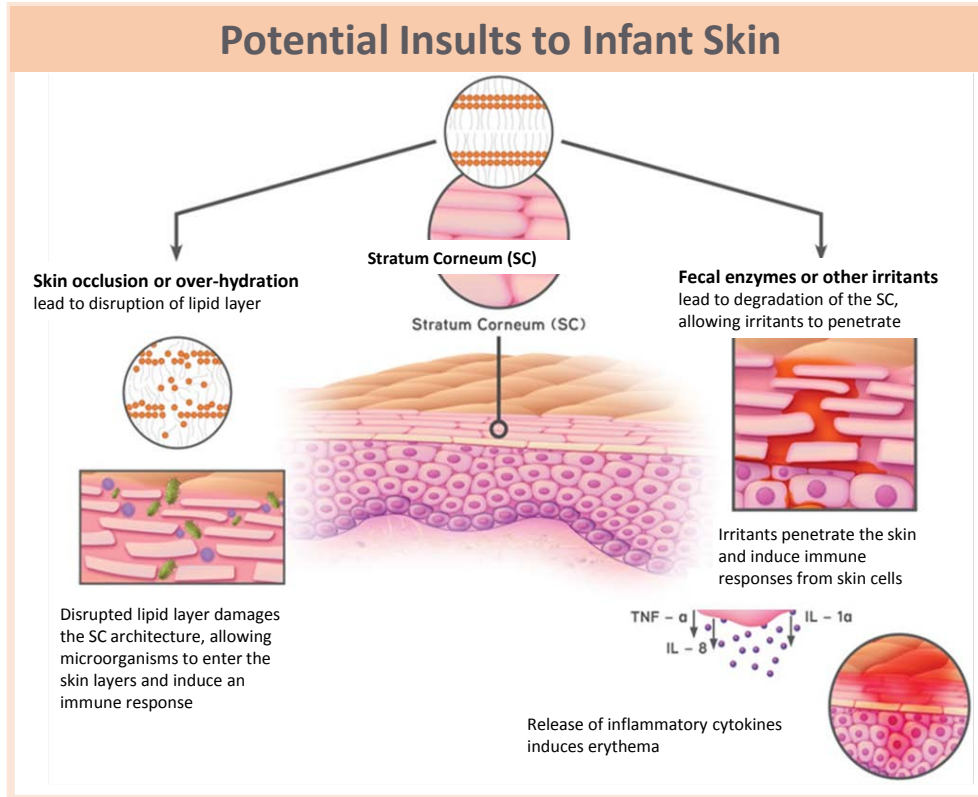
Encourage bonding and emotional connection between infant and caregiver

Moderate harmful sensory stimulation

Provide developmentally appropriate touch

¹ Coughlin ME. Trauma-Informed Age-Appropriate Care. In: Transformative Nursing in the NICU. New York, NY: Springer Publishing Company; 2014:29-40

Change and Check: Background



- Diaper dermatitis (diaper rash) is the most common skin condition in infants;^{2,3} it can cause discomfort and emotional stress⁴
- Infant skin performs critical functions, such as forming a barrier to water loss and irritants, and infection control¹
- Potential insults to infant skin include fecal enzymes and over-hydration that can produce an erythema (figure); infants' immature skin makes them particularly vulnerable¹

¹ Visscher MO, et al. Clin Dermatol. 2015;33:271-280.

² Lund CH, et al. J Obstet Gynecol Neonatal Nurs. 2001;30:30-40.

³ Blume-Peytavi U, et al. Pediatr Dermatol. 2014;31:413-429.

⁴ Stamatas GN, et al. Pediatr Dermatol. 2010;27:125-131.

Change and Check: Interventions

To promote healthy infant skin:¹

Perform focused assessment of perianal area at each change

Use disposable diapers with super absorbent polymers^{1,2}

Change diapers every 1-3 hours when awake, and with each feeding at night (at a minimum once during the night)¹

Conduct gentle thorough cleaning of genital area with appropriately formulated cleansing agents at every change (such as baby wipes)^{1,3}

Encourage diaper-free time^{4,5}

Ensure proper diaper fit to promote healthy skin and proper musculoskeletal alignment^{2,6}

1. AWHONN. Neonatal skin care, evidence-based clinical guidelines, 3rd ed. Washington, DC: AWHONN; 2014. 2. Counts JL, et al. Clin Pediatr (Phila). 2014;53(suppl 9):10S-13S. 3. Visscher M, et al. Neonatology. 2009;96:226-234. 4. Stamatias GN, et al. Pediatr Dermatol. 2010;27:125-131. 5. Shin HT. Pediatr Clin N Am. 2014;61:367-382. 6. Clark-Greuel JN, et al. Clin Pediatr (Phila). 2014;53(9 suppl):23S-26S.

Comfort: Background



- Studies show that even standard caretaking procedures like diapering and tub bathing can lead to increased stress responses in full-term⁵ and premature infants^{1,2}
- Routine caregiving has been linked to physiological markers of stress in premature infants, such as major cerebral hemodynamic fluctuations³
- The possible long-term neurobehavioral outcomes related to repeated pain and stress exposures in the NICU include emotional, behavioral, and learning disabilities⁴

¹ Comaru T, Miura E. Postural support improves distress and pain during diaper change in preterm infants. *J Perinatol.* 2009;29:504-507.

² Newnham CA, Inder TE, Milgrom J. Measuring preterm cumulative stressors within the NICU: the Neonatal Infant Stressor Scale. *Early Hum Dev.* 2009;85:549-555.

³ Limperopoulos C, Gauvreau KK, O'Leary H, et al. Cerebral hemodynamic changes during intensive care of preterm infants. *Pediatrics.* 2008;122:e1006-13.

⁴ American Academy of Pediatrics. Prevention and management of pain in the neonate: an update. *Pediatrics.* 2006;118:2231-2241.

⁵ Mörelis E, Hellström-Westas L, Carlén C, Norman E, Nelson N. Is a nappy change stressful to neonates? *Early Human Dev.* 2006;82:669-676.

Comfort: Interventions

To minimize infant stress during diapering:

Assess infant cues related to stress and pain^{1,2}

Provide pain/stress prevention techniques such as non-nutritive sucking, Kangaroo care^{3,4,5,6}

Educate parents on infant cues⁷

Provide state and motor support during stressful events⁵

¹ Coughlin M, et al. JAN. 2009;65:2239-2248.

² American Academy of Pediatrics and The Canadian Paediatric Society for the Committee on Fetus and Newborn Committee on Drugs. Pediatrics. 2000;105:454-461.

³ Comaru T, et al. J Perinatol. 2009;29:504-507.

⁴ Ward-Larson C, et al. MCN Am J Matern Child Nurs. 2004;29:151-156.

⁵ Dodds E. Paediatr Nurs. 2003;15:18-21.

⁶ Gardner SL, et al. In; Gardner SL, Carter BS, Hines ME, Hernández JA, eds. Merenstein & Gardner's Handbook of Neonatal Intensive Care 8th ed. St. Louis, MO: Elsevier; 2016.

⁷ Karl DJ, et al. MCN Am J Matern Child Nurs. 2006;31:257-

Champion Sleep: Background



- Sleep plays a critical role in cognitive, psychological, and temperament development¹
- Adequate sleep during neonatal period is associated with linear growth, weight gain, and increase in growth hormone^{2,3}
- Sleep is also directly linked with immune function enhancement and reduction of stress hormones^{2,3}
- Sleep-deprived premature infants may be at risk for compromised emotion regulation, language, learning and executive functioning⁴

¹ Ednick M, et al. *Sleep*. 2009;32:1449-1458.

² Besedovsky L, et al. *Pflugers Arch*. 2012;463:121-137.

³ Ganz FD. *Crit Care Nurse*. 2012;32:e19-25.

⁴ Coughlin CC, et al. *Pediatr Dermatol*. 2014;31(Suppl 1):1-4.

Champion Sleep: Interventions

To promote sleep:

Educate caregivers about clustering care to avoid sleep disruption

Encourage Kangaroo care, skin-to-skin contact, gentle healing touch^{1,2,3}

Employ strategies to facilitate sleep, and promote uninterrupted and organized sleep^{4,5}

Provide infants with music therapy, singing, biological maternal sounds^{6,7}

Use diapers with wetness indicators when possible to avoid unnecessary interruptions^{4,5}

¹ Cong X, et al. J Pain. 2012;13:636-645.

² Engler AJ, et al. MCN Am J Matern Child Nurs. 2002;27:146-153.

³ Scher MS, et al. Clin Neurophysiol. 2009;120:1812-1818.

⁴ Als H, et al. Ment Retard Dev Disabil Res Rev. 2005;11:94-102.

⁵ Coughlin CC, et al. Pediatr Dermatol. 2014;31(Suppl 1):1-4.

⁶ Doheny L, et al. Pediatr Int. 2012;54:e1-3.

⁷ Standley J. Neonatal Netw. 2012;31:311-316.

Confidence and Closeness: Background



- When parents are provided with opportunities to connect with their infant, the parents themselves experience physiological and behavioral benefits, such as early bonding, increased confidence in parenting skills, and a sense of control.¹
- This physical and emotional closeness with a parent in the NICU can also have positive and long-lasting physical, psychosocial, cognitive, and neurobehavioral effects on the infant's development.^{2,3,4,5,6}

¹ McGrath JM. Family: essential partner in care. In: Kenner CM, Lott JD, eds. *Comprehensive Neonatal Care: An Interdisciplinary Approach 4th ed.* St. Louis, MO: Saunders Elsevier; 2007.

² Craig JW, Glick C, Phillips R, et al. *J Perinatol.* 2015;35 Suppl 1:S5-S.

³ Feldman R, Weller A, Sirota L, et al. *Dev Psychol.* 2002;38:194-207.

⁴ Als H, Duffy F, McAnulty G, et al. *Pediatrics;* 2004.113:846.

⁵ Flacking R, Lehtonen L, Thomson G, et al. *Acta Paediatr.* 2012;101:1032-1037.

⁶ Milgrom J, Newnham C, Martin PR, et al. Early communication in preterm infants following intervention in the NICU. *Early Hum Dev.* 2013;89:755-762.

Confidence and Closeness: Interventions

To promote family integrated care during diapering:

When possible, reserve intentional care measures for families to implement with their infant¹

Support parents in their new roles as “confident caregivers”²

Encourage parents to incorporate developmentally appropriate care measures²

Model use of the diaper change as an opportunity to engage with the infant^{3,4}

Share the importance of proper positioning and handling during diapering⁵

1. McGrath JM. Family: essential partner in care. In: Kenner CM, Lott JD, eds. *Comprehensive Neonatal Care: An Interdisciplinary Approach 4th ed.* St. Louis, MO: Saunders Elsevier; 2007.
2. Cong X, et al. *J Pain.* 2012;13:636-645.
3. Coughlin M, et al. *JAN.* 2009;65:2239-2248.
4. Karl DJ, et al. *MCN Am J Matern Child Nurs.* 2006;31:257-262.
5. Lyngstad LT, et al. *Early Hum Dev.* 2014;90:169-172.

Conclusion: Every Change Matters



- The Huggies Nursing Advisory Council advocates conscientious integration of the five areas of focus into diapering care for full term and premature infants, whenever possible and practical
- The Council seeks to shift attitudes and approaches toward routine cares such as diapering: transforming the perception that diapering is a rote task into an appreciation of the significant opportunity this routine care provides for nurturing, connecting, and fostering optimal growth and development of infants

Every Change Matters: A Guide to Developmental Diapering Care

Every Change Matters Nurse Education Program – provides clinical resources to equip you with developmental diapering knowledge, skills to use in practice and strategies to teach/engage parents in caring for and bonding with their infant.

- *Nurse Education Program*
- *Program overview video*
- *Monograph*
- *Quick-reference guide and Wall-poster*
- *AWHONN Healthy Mom&Baby “Diapering that nurtures your baby”*

Questions



**For more information go to
[HuggiesHealthcare.com](https://www.HuggiesHealthcare.com)**

