



Reducing Stress and Optimising Outcomes in neonatal care

Julia Petty

Areas covered....

- Developmental care integrated with family centred care
- Positioning
- Environmental care
- Positive touch & handling
- Non-nutritive sucking
- Skin to skin contact/care
- Pain management



Developmental care

- Those interventions that support and facilitate the stabilisation, recovery and development of infants and families undergoing intensive care, and beyond, in an effort to promote optimal outcome
- Developmental needs are complex
- Environment is often inappropriate
- Parental relationships also require consideration

Aims

- To integrate the developmental needs of neonates with intensive / special care
- To understand a neonate's developmental needs
- To provide interventions necessary to support development
- Recognise the family as an equal member of the health-care team

Fostering parent-infant interaction

- Aim to support mutually satisfying parent-infant interaction
- Establish a family-centred approach
- Empower parents to assume their natural role of advocating for their infants' needs
- Support parent's ability to understand their infant's level of communication

Neonatal self-regulation

- 'Organisation' or self regulation of *behaviour*– the ability to maintain a balance as the neonate deals with the demands of the environment
- Aim is to maintain or return to a state of balance and relaxation.
- E.g. calming measures to encourage consolability, '*self-quieting*', / 'habituation', hand-to-mouth movement /action & sucking have consoling effects
- Sources:
 - Brazelton TB and Nugent JK. (2011) Neonatal Behavioral Assessment Scale (Clinics in Developmental Medicine) – 4th edition. Mac Keith Press
 - Kenner, C & McGrath, J (2004) *Developmental Care of Newborns & Infants: A Guide for Health Professionals*. Mosby: New York.

Behavioural organisation

- Organisation is reinforced and enhanced by caregivers who recognise and respond to behavioural cues of the neonate.
- Provide 'time-out' when there are avoidance behaviours
- Support efforts to balance signs of stability
 - How does he / she respond to caregiving?
 - Does he/she like a particular position ?
 - What has a negative impact on the infant?
 - How much stimulation can the neonate tolerate?
 - Can the timing and organisation of procedures be altered to decrease stress?

Interventions

- To help the neonate / infant manage stress and organise behaviour
- AIM to enhance an organised, quiet, alert state
- E.g. - swaddling, non-nutritive sucking, decreasing visual / auditory stimuli, elicit grasp or rooting reflexes
- Handling – minimal when stressed. Start appropriate handling when neonate is stable – e.g. stroking
- Hawthorne, 2005; Westrup, 2006; Hamilton, 2008

Interventions

- Observe for stressed (or 'avoidance') behaviours – gaze aversion, regurgitation, crying, extension.
- Provide a 'time-out' from incoming stimuli when a neonate is stressed to allow him/her to self-regulate
- Hold limbs in flexion close to body
- Get to know individual sensitivities and responses for the best consoling

Positioning

- Promote physiological flexion – limbs in the mid-line for hand-to-mouth orientation
- Flexion – hips and knees in symmetry, arms forward and flexed, head in line with body
- Boundaries ('nesting') – in relation to those movements aimed at making and maintaining contact with a stable surface in the immediate environment
- Organisation through containment

Promote physiological flexion



Modifying environment

- Light
- Noise
- Activity / interventions
- Temperature
- Avoid excessive noise and handling which cause instability & stress

Pickler et al, 2013



Positive Handling

- Therapeutic touch – stroking / massaging gently according to neonates' cues
- Kangaroo Care – “skin-to-skin” to promote parental involvement and also improve many physiological functions (e.g. thermal control)
- Consider in both intubated and non-intubated neonates.

Curran et al, 2008; Lawn et al, 2010,
Moore et al, 2012.





Non-nutritive sucking

- AIM – to enhance later success in oral feeding
- Simple intervention
- Brings neonate to an alert state
- Transition to oral feeds more successful
- An opportunity for parental involvement

Pain & stress management

- Assessment of pain & stress is essential and consideration of the causes. Integrate this into normal assessment and care planning.
- Assess all areas –
 - physiological (e.g. heart rate, saturations)
 - biochemical (e.g. glucose?) and
 - behavioural (e.g. facial expression, body movements).
- Various pain assessment tools exist
- AAP, 2006; Twycross, 2006; Meek. 2012



Pain & stress management

- *Pharmacological* management in sick neonate – paracetamol for non-ventilated, morphine for ventilated
- *Non-pharmacological* – Sucrose for procedural pain, breast milk, pacifier, holding, rocking, skin to skin and other soothing measures – these are key nursing areas and an ideal opportunity to involve the parents

Finally

- “Care should be supportive to the behavioural organisation of the infant, thus he should be handled when he / she wishes and left to rest when he exhibits signs of stress” (Wolke, 1987 in Brazelton & Nugent, 2011)
- *Julia Petty*

Further Reading

- *DEVELOPMENTAL CARE*
- BLISS <http://www.bliss.org.uk/improving-care/family-centred-care/developmental-care-sig/>
- Brazelton, T. ,& Nugent, J. (2011) *Neonatal Behavioral Assessment Scale (Clinics in Developmental Medicine) 4th edition*. MacKeith Press.
- Hamilton K E (2008) Developmental care: the carers perspective. *Infant*. 4(6): 190-95. http://www.infantgrapevine.co.uk/pdf/inf_024_cps.pdf
- Hawthorne, J. (2005) Using the Neonatal Behavioural Assessment Scale to support parent-infant relationships *Infant* 1(6): 213-18. http://www.infantgrapevine.co.uk/pdf/inf_006_irs.pdf
- Neonatal Development Care website
- <http://www.neonataldevelopmentalcare.com/Resources/index.html>
- Westrup, B (2006) Newborn Individualized Developmental Care and Assessment Program (NIDCAP) – Family centered developmentally supportive care. <http://99nicu.org/articles/Westrup2006.pdf>
- *ENVIRONMENTAL CARE*
- Pickler. RH, McGrath JM, Reyna BA, Tubbs-Cooley HL, Best AI M, Lewis M, Cone S & Wetzel PA (2013). Effects of the neonatal intensive care unit environment on preterm infant oral feeding. *Research and Reports in Neonatology*. 3; 15-20. <http://www.dovepress.com/effects-of-the-neonatal-intensive-care-unit-environment-on-preterm-inf-peer-reviewed-article-RRN>
- *Rosie Hospital The Nursery Environment*
http://www.cuh.org.uk/rosie/services/neonatal/nicu/developmental_care/nursery_environment.html

Further Reading

- *PAIN IN THE NEONATE*
- American Academy of Pediatrics (AAP), Committee on Fetus and Newborn and Section on and Fetus and Newborn Committee. (2006) Prevention and Management of Pain in the Neonate: An Update. *Pediatrics*; 118;2231. <http://pediatrics.aappublications.org/content/118/5/2231.full.html>
- Meek J (2012) Options for procedural pain in newborn infants. *Archives Disease in Childhood Education and Practice Edition* 97: 23-28. doi: 10.1136/archdischild-2011-300508
<http://ep.bmj.com/content/97/1/23.full.html>
- Shah P, Aliwalas L, Shah V (2007) Cochrane review: Breastfeeding or breast milk for procedural pain in neonates. *Evidence Based Child Health* 2: 25–60. doi: 10.1002/ebch.119.
<http://apps.who.int/rhl/reviews/cd004950.pdf>
- Twycross, A. (2006) Managing pain during the first year of life *Infant* 2(1): 10-14.
http://www.infantgrapevine.co.uk/pdf/inf_007_mpd.pdf
- *KANGAROO CARE / SKIN TO SKIN*
- Lawn, JE, Mwansa-Kambafwile, J, Horta, BL, Barros4, FC and Cousens, S. (2010) Kangaroo 'mother care' to prevent neonatal deaths due to preterm birth complications. *International Journal of Epidemiology*. 39:i144–i154. doi:10.1093/ije/dyq031.
http://ije.oxfordjournals.org/content/39/suppl_1/i144.full.pdf+html
- Curran R.L., Genesoni L., Huertas Ceballos A., Tallandini M.A. A Kangaroo Mother Care research study: a work in progress. *Infant* 2008; 4(5): 163-65. http://www.infantgrapevine.co.uk/pdf/inf_023_mer.pdf
- Moore ER, Anderson GC, Bergman N, Dowswell T. Early skin-to-skin contact for mothers and their healthy newborn infants. Cochrane Database of Systematic Reviews 2012, Issue 5. Art. No.: CD003519. DOI: 10.1002/14651858.CD003519.pub3.
<http://onlinelibrary.wiley.com/o/cochrane/clsysrev/articles/CD003519/frame.html>