Neuroprotective Care in the NICU

INFANT DRIVEN FEEDING

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Vision Statement

We believe that every child deserves the best start in life no matter how small.

Objectives

- Neuroprotective care measures for family-centered developmental care and how it relates to feeding/eating for a preterm baby
  - Core measures 1 (healing environment)
  - Core measure 2 (partnering with families)
  - Discuss the impact of oral experiences from DOL 1 along the developmental timeline to the timing of infant’s readiness and ability to breastfeed/bottlefeed.
  - Consider the influence of sensory processing on oral feeding
  - Review infant driven feeding
  - Discuss outcome measures
Core Measure 1
Healing Environment

- Response to touch, movement, sound, light
- First experiences – colostrum, oral care, gustatory (taste), olfactory (smell)

Core Measure 2
Partnering with families

- Skin to skin holding
- Gentle touch/containment
- Consistency of maternal/paternal voice
- Oral Care

Sensory processing and Oral Feeding

The use of all 7 senses for eating:
- Vestibular – movement
- Proprioceptive – where is my body in space
- Tactile – touch
- Taste
- Smell
- Vision
Developmentally Supportive Approach

- Observing the infant for behavioral cues of stability or stress
- Individualizing interventions contingent on the infant’s cues, to help maintain and regain coordination
- Facilitating the parents’ competence and confidence in feeding their infant

Goals of Feeding

- To create a positive feeding interaction while assisting infants to maximize successful intake and minimize stress to achieve full oral feedings
- To prevent the development of oral and feeding challenges
  - Safe
    - Minimize risk of primary aspiration
    - Functional and respondent to the infant’s cues
    - Nurturing
  - Developmental and individually appropriate

Infant Driven Feeding

- If feeding provides too great a challenge to physiologic stability it can have a negative impact on the control of the larynx, pharynx, and the esophagus
  - Deterioration increases the potential for aspiration
Safe and successful feeding in the preterm or critically ill infant

Protect the airway from compromise by fluid

Control and coordinate postural, oral and upper airway motor systems

Sustain attention to task of feeding for duration of feeding

Stress/Disengagement Cues

- Significant change in HR, RR, O2 levels
- Increased work of breathing
- Color changes
- Motor stress cues
- SSB dyscoordination
- Fatigue/loss of tone
- “Shutting down”

Positive Feeding Experience

- Nurturing
  - Feeding should be a fun, nurturing experience whether by tube feed, breast fed, or bottle fed
  - Consistency with information and feeding techniques

- Developmentally and individually appropriate
  - Nipple selection is determined regarding individually’s needs
  - Each feeding is assessed on its own

- Remember sensory experiences (night shift less stimulation, day shift more procedures/professionals)
Feeding Outcomes

- In a healthy sample of ELBW infants, 80% had feeding problems such as poor intake, fatigue, and delayed feeding skills at 6 mos. corrected age
  - 40% of these infants had episodes of aspiration with eating, and 85% continued to have GE reflux (Mathisen & colleagues)

Feeding Outcomes

- Parental concerns:
  - In a study of infants born <32 weeks GA examined at 2.5 years old
    - 78% of parents were concerned about the quality of food their kids were eating
    - 58% reported food refusal
    - 51% used food rewards
    - 28% of the infants had poor weight gain

Suck/Swallow Organization

- Preterm infants with CLD have decreased:
  - Stability of sucking rhythm
  - Aggregation of sucks into burst-patterns
  - Length of bursts
  - Percentage of swallows (Gewolb, et al, 2001)
  - Complexity of suck swallow breathe synchrony
    - 26 muscles
    - 6 cranial nerves to complete one swallow
Infant Driven Feeding

Remember, IDF is a system. You began at admission by:

- Supporting and protecting neurodevelopment
- Involving human touch and interaction with all feeding experiences, educating and involving parents in all aspects of care including reading infant cues and skin-to-skin
- Doing your part in unifying the team around this infant’s care
- Getting to know this infant’s individual cues
- Letting go of old feeding culture
- Let’s stop force feeding infants!!

Positive Feeding Experience

- Feeding should be safe and pleasurable
- Sensory experiences matter
  - 2 person touch time, skin to skin, environment, oral care, colostrum care, etc.
  - All of these components will lead and impact the baby’s experiences of taking the bottle and/or breastfeeding and beyond discharge from the NICU
- Adhere/respond to infant’s disengagement cues
- There must be consistency among caregivers