

Every Feed Matters: Developmentally Supportive Feeding on the NICU

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What do neonatal Speech Therapists do?

- We identify infants who are at risk of feeding and/or swallowing and communication difficulties
- We work with the nursing team to support and empower parents to read their infant's communication (cues)
- We help infants to establish safe and positive oral feeding
- We work with the wider team promoting developmental care to support optimal neurodevelopment

Laying foundations



- Feeding reflexes are genetically predetermined
- Environmental experiences shape brain development
- In utero experiences create expectations

What do parents expect feeding to be like?

Pain free

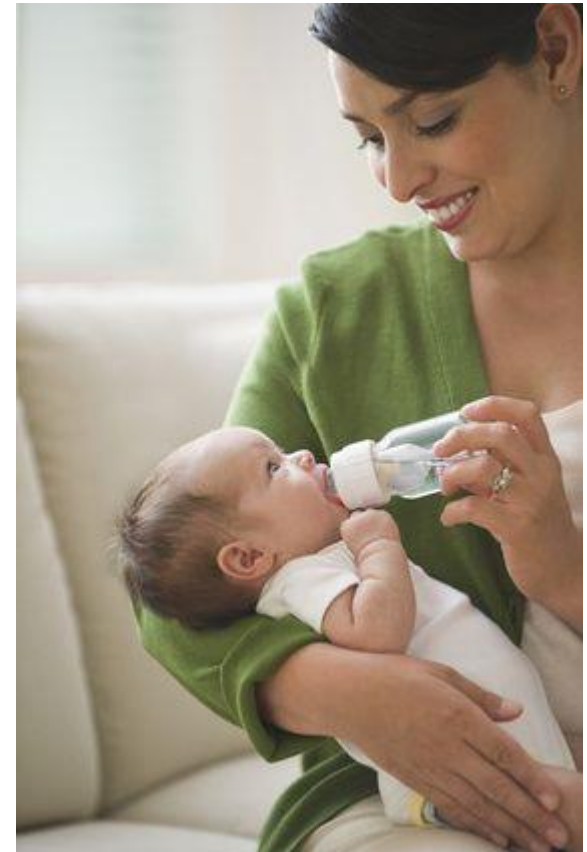
Relaxed

Comfortable



Content

Safe



“Parents frequently evaluate their premature infant’s health and their competency as parents by the infant’s feeding success and weight gain before and after discharge.”

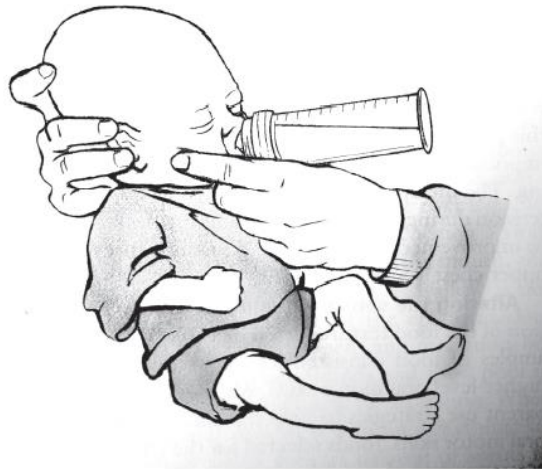
Deloian, 1998

Altered sensory experiences

- Ventilation
- Long periods of being nil orally
- Alternative feeding methods (Naso-gastric feeds).
- Suctioning

Touch is
unpredictable

Feeding is
uncomfortable



“Early emotional experiences become embedded in the architecture of the brain”

National Scientific Council on the Developing Child DC,2014

The long term impact of stress



Brief increases in heart rate,
mild elevations in stress hormone levels.



Serious, temporary stress responses,
buffered by supportive relationships.



Prolonged activation of stress
response systems in the absence
of protective relationships.

“In understanding that hospitalisation in the NICU is a traumatic life event, clinicians are better prepared to incorporate Evidence Based practices to minimise and mitigate the associated toxic stress and favourably impact long term mental health needs.”

Coughlin, 2014

What causes stress during oral feeds?

Separation

Unfamiliar/Multiple
Caregivers

Gastro-
Oesophageal
Reflux (GOR)

Positioning

Adult/Schedule
led

Choice of teat

Feeding when not
developmentally
ready

Developmentally supportive feeding

1. Supporting opportunities for normal feeding development

Taste, rooting, licking, sucking, swallowing, flexion

2. Encouraging oxytocin releasing activities

Maternal/paternal voice, touch, skin to skin contact

Feeding readiness

- Learning to feed is a developmental skill and the result of neurodevelopmental maturation that begins in utero (Als, 1982) It is not a light bulb moment.
- Focus on **quality** not **quantity**. “Quality should focus on infant skill, parental competence and confidence, and physiologic, motor and state stability”. (Ross, 2013)
- Readiness cues more commonly known than stress cues

Feeding readiness cues

Developed by Women's and Newborn Services
Royal Brisbane and Women's Hospital

Early Cues - "I'm hungry"



Stirring



Mouth opening



Turning head
Seeking/rooting

Mid Cues - "I'm really hungry"



Stretching



Increasing physical
movement



Hand to mouth

Late Cues - "Calm me, then feed me"



Crying



Agitated body
movements



Colour turning red

Time to calm crying baby

- Cuddling
- Skin-to-skin on chest
- Talking
- Stroking

Reading Stress Cues – Autonomic Responses

- Respirations
- Heart rate
- Oxygen saturations
- Colour changes
- Hiccups



Reading Stress Cues

- Crying
- Grimacing
- Startled look
- Finger splay
- Change in tone (hyper/hypo-tonic)
- Arching
- Sudden loss of alertness
- Reduced suck/swallow/breathe co-ordination
 - Gulping
 - Dribbling feed
 - Potential for aspiration



Reading Stress Cues – in practice

Infants' breathing is disrupted so compensates by changing sucking pattern



Unaware that this is a compensatory strategy, caregiver attempts to support by increasing flow rate of milk



Infant “fights the flow” to breathe; desats/reduced co-ordination



Accumulation of these responses to physiological instability may create a pattern of stress and feeding refusal behaviours

Responsive Bottle Feeding

- Responding to both feeding and stress cues
- Offer more controllable flow rate
- Elevated side lying feeding position
- Supportive swaddling
- Offer co-regulated pacing during feeding
- Use re-arousal or calming to help regulate infant's arousal state
- Use a developmentally supportive framework for feeding with pre-terms and their families

(Shaker 2013)

Gastro-Oesophageal Reflux (GOR)

- Review of Pediatric Healthy Informa-on System database (18,567 preterm infants, born 22-36 wks, 33 NICUs)
 - 10% diagnosed with GOR
 - GOR diagnosis significantly associated with BPD, NEC, congenital anomalies, feeding problems
 - GOR diagnosis associated with 30 day longer NICU stay
 - 25% of ELBW babies home on GOR meds

Gastro-Oesophageal Reflux (GOR)

- On-going struggle with GOR can lead to:
 - Reduced acceptance of oral intake
 - Multiple hospital admissions with poor feeding
 - Worsening oral aversion
 - The need for enteral feeding
 - Difficulty with weaning onto solids and more textured food

Parents Voice

Keeping a child well nurtured and fed is perhaps the most basic of a parent's duties. Imagine my despair then, when I couldn't feed my baby.

He would scream in distress, arching his back, whenever he was brought to the breast or at the mere sight of a bottle.

I held him at nights and watched him suck furiously on his thumb; he preferred to be hungry than to endure the perceived pain from feeding.

8 weeks and multiple admissions for dehydration later, he dropped weight centiles and was admitted for a nasogastric tube.

Long Term Feeding Outcomes

“NNU graduates tend to be sufficient oral feeders by the time of discharge from neonatal care but are not yet “ skilled ” feeders” (Thoyre, 2003).

Long Term Feeding Outcomes



“While most infants are discharged home fully orally fed, many of these infants over time show negative feeding behaviours and slow growth (Ross, 2009)”

Over 50% of parents report problematic feeding behaviours in former pre-terms at 18-24 months (Hawdon et al, 2000)

- Reduced tolerance of lumpy textures
- Reduced enjoyment of meal times
- Reduced parental enjoyment of meal times

Long Term Feeding Outcomes

It is therefore critical to consider the preterm infants' experiences early on and the conditions and strategies that may reduce the risk of a persistent feeding difficulty (Thoyre, 2007)

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