



Pre-Feeding Readiness In the NICU

Kathryn Curley, B.A.
SLP Graduate Student
Loyola University Maryland
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Impact of Oral Feeding Readiness

- “If the introduction of oral feeding and the transition process is not approached carefully, an infant may require prolonged gavage tube feeding. Feeding problems left unresolved at the time of discharge may persist into early childhood and present as oral feeding aversion and other long-term feeding issues, which include tactile sensitivity, selective eating, and failure to thrive.” (Jones, 2012)
- 31% of the pediatric population with feeding issues are NICU graduates (Hawdon et. al, 2000)
- 40% of children referred to an outpatient specialty clinic for feeding or growth concerns are former preemies (Hawdon et. al, 2000)

Oral Feeding Readiness (OFR)

(Jones, 2012)

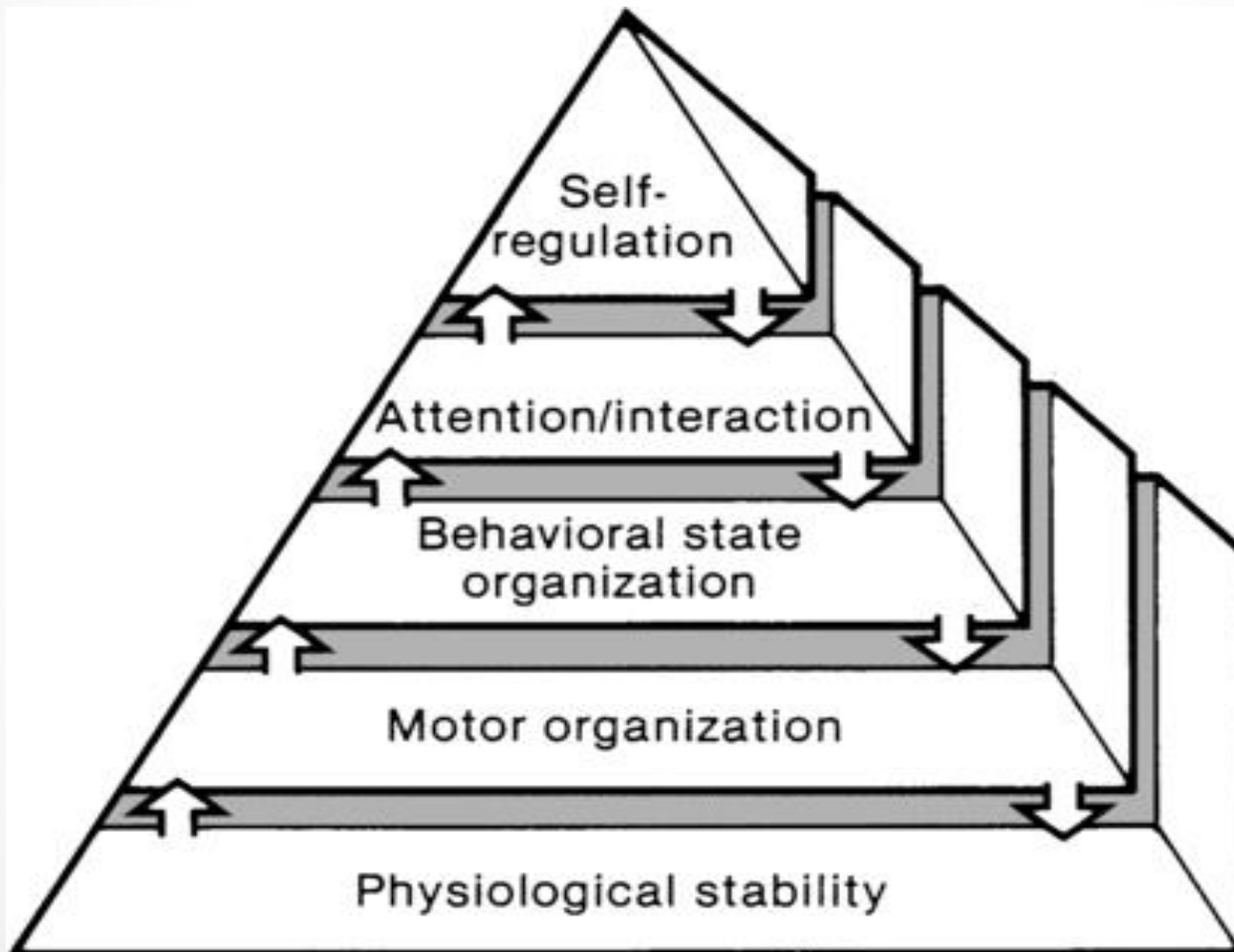
1. When the infant is prepared to begin oral feeding attempts for the first time
 - Infant exclusively feeding by gavage tube, ready to be introduced to oral feedings
 - Determined by maturational state
2. When the infant is prepared to partake in a *specific* feeding event
 - Determined by:
 1. Level of alertness
 2. Physiologic status
 3. Display of hunger cues

Variables That Determine Infant's Maturation State

(Jones, 2012)

- GA at birth & PCA
- Severity of illness
- Respiratory and cardiovascular stability (i.e., oxygen dependency, apnea, bradycardia)
- Motor stability (tone, posture, quality of movement)
- Sucking, swallowing, breathing coordination
- Ability to maintain temperature in an open environment
- Ability to maintain alertness
- Demonstration of hunger cues
- Tolerance of enteral feedings

Infant Subsystems (Als, 1982)



Homeostasis

Infant's Goal = **Organization** → achieved by homeostasis

- Homeostasis: The state of equilibrium between interdependent elements (i.e., subsystems)
- All four subsystems must be in check before infant can take on a challenge such as transitioning, NGT/OGT removal, or feeding
- Stress cues that are demonstrated at each level of the subsystems can make an infant fall back in the levels
- We are supporting these subsystems – by not supporting their distress cues, we can push them back in their pyramid/subsystems.

Physiologic stability: the core system

- FIRST must obtain stability of **autonomic** subsystem, or oral feeding will cause disorganized state which will lead to difficulty feeding and unnecessary energy expenditure.
- Stability of: RR, HR, thermoregulation, digestion

Autonomic stress signals:

- Apnea
- Bradycardia
- Tachypnea
- Color changes
- Gagging
- Spitting up
- Hiccupping
- Straining
- Twitching/tremors
- Coughing
- Sneezing
- Yawning
- Temperature changes

Motoric Subsystem

- Motoric = TONE
- Approach Signals:
 - Smile
 - Mouthing
 - Cooing
 - Relaxed limbs
 - Quiet & Alert
 - Soft, relaxed facial expressions
- Stress Signals:
 - Flaccidity (trunk, extremities, facial)
 - Hypertonicity (finger splaying, facial grimacing, tongue extensions, hand on face, high guard arm)

Behavioral Subsystem

(Als, 2005)

- Infant's level of alertness, covering a wide range of behavior states
- Infant must be able to transition through these states to achieve a quiet alert or active alert state for successful oral feeding to occur
- Behavior state-related stress signals include:
 - Diffuse sleep/awake states with facial twitches, smiling
 - Eye floating
 - Strained fussing or crying
 - Panicked or worried alertness

Attention/Interaction Subsystem

- Infant is alert and interactive with environment
- Alertness = the most optimal state for oral feeding, essential for feeding success

https://www.youtube.com/watch?v=DE1nqZLJ_O4



Stability Matters

- If equilibrium between subsystems is not achieved, disorganized behavior may be exhibited by infant
- Signs of disorganized behaviors indicate stress and that the infant is not prepared for oral feeding
- Our role: Aid the infant in developing skills to self-regulate or move within these behavioral systems

Our Role: Oral Stimulation/Oral Experience

- Oral Stimulation: Considered a programmatic approach to provided tactile input to the face/mouth/tongue/lips/infant
- Oral Experiences refers to infant-driven positive experiences around the face/mouth/tongue/lips
 - Kangaroo mother care (KMC)
 - Non-nutritive sucking
 - Independent exploration of face/mouth. (hands to mouth)



Oral Stimulation/ Oral Experience Plan for Caregivers

Hi Everyone!

Thank you for helping me learn to feed by doing the following
at least one or two times a day:

- ❖ During my Care Times, please talk to me in a **quiet, calming voice**.
- ❖ If my breathing looks great, **I like to be held during tube feedings**.
 - Please swaddle me, with my hands out so I can touch my face with them.
 - Place me in a comfortable cuddle position or in a side lying position, but I love to see your eyes!
 - Keep my environment calm: I like dimmed lights, calming sounds, and no loud noises
- ❖ If I enjoy being held and my breathing looks great still, **please offer me light and gentle touches to my face**.
 - Symmetrical stroking from my forehead to my mouth: Place index fingers at the middle of my forehead and move them out and downward over my cheeks, bringing them together near my mouth
 - If I like that, please offer me strokes by my mouth: Symmetrical stroking from my forehead to my mouth: Place index fingers at the middle of my forehead and move them out and downward over my cheeks, bringing them together near my mouth
- ❖ If I enjoy touches to my face, **I may enjoy my pacifier**:
 - Please offer the pacifier to the corners of my mouth. Wait for me to open! If I don't open, I may not want the pacifier in my mouth.
- ❖ Before or during the tube feeding starts, **please offer me smells of breastmilk/formula** so I can learn more about eating.
 - Place a small amount of breastmilk/formula on a cloth; may offer these smells after the nasal cannula or my nose is cleaned
- ❖ I can also learn more about eating by getting **tastes of breastmilk/formula**
 - Please offer my tastes of breastmilk/formula ONLY IF I am awake, alert, and enjoying sucking on my pacifier or enjoying touches to my lips/mouth.

Signs that I need to stop or take a break from learning to basics of feeding:

1. Mean/sad faces: raised or scrunched eyebrows, pursed or closed lips, eye rolling or big bulging eyes,
2. Increased work of breathing that makes my head bob up and down, or my nostril flare nasal
3. Gagging or coughing
4. Stops Signs: My hands will go up and tell you to stop!
5. Drowsy or Sleepiness

Thanks for your help!

Love,



References

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