Promoting Sensory Regulation Through Infant Feeding After Birth Trauma

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Learning Objectives
- Understand the latest research related to the interplay of birth trauma, sensory regulation and feeding.
- Identify signs of sensory challenged feeding situations
- Promote sensory supportive feeding strategies with parents and babies who have experienced early trauma/stress to improve regulation and attachment
What is the importance of feeding for the baby?
- Nutritional fulfillment
- Primal reflexes and sensory experiences in early feeding impact development throughout the lifespan
- Feeding provides regular opportunities for caregiver interaction
- Establishes caregiver consistency in response to cues
- Emotional trust to fulfill needs of feeling calm, satiated

What is the importance of feeding for the caregiver?
- Emotional satisfaction of watching baby grow
- Growth is a sign to the outside world that mother is capable of meeting baby’s needs
- Provides an opportunity for regular, 1:1 interactions with the baby
- Mother is primed for feeding and bonding after birth. Flood of hormones affect maternal feeling of overwhelming love, fierce protectiveness, and constant worry
- Short and long term health benefits gained by breastfeeding mothers
- Mothers who choose to breastfeed display enhanced sensitivity during early infancy that, in turn, may foster secure attachment. (Briton, Briton, Grohnwall, 2006)

Physiological factors that impact the parent/child bond and feeding success
Early Reflexes and Motor Skills

- Bauer’s Crawling Reflex
- Symmetrical Tonic Neck Reflex (STNR)
- Rooting reflex
- Hand to mouth
- Suck, swallow, breathe timing
- Oral motor coordination/strength

The 8 Senses

- Vestibular: Processed in the inner ear. This system is the basis for spatial awareness and provides information about what direction and how fast the body is moving. Plays an important role in postural control, bilateral coordination, vision and auditory sensory development.

- Proprioception: Input received through muscles and joints that provides information about where the body in space. Responsible for body position in relation to itself and objects, provides feedback related to force modulation.
The 8 Senses (continued)

- Tactile: Touch receptors are located under the skin. Protective tactile processing alerts to danger and discriminative tactile processing provides information about the quality of touch (hard/soft, sharp/dull, rough/smooth, hot/cold).
- Auditory: The ability to interpret important sound information. Closely tied to visual and tactile development.
- Visual: The ability to interpret important visual input in the environment

The 8 Senses (continued)

- Gustatory: Sense of taste
- Olfactory: Sense of smell
- Interoception: The sense we receive from our internal organs (feeling of fullness, bladder/bowel control)

SENSORY INTEGRATION

- Jean Ayres (1979) “Sensory integration is the ability of the central nervous system to organize and process input from different sensory channels in order to make an adaptive response.”
- We all have our own sensory idiosyncrasies
- Sensory co-regulation—parent’s state regulation affects baby’s state regulation
- Positive sensory experiences between baby and caregiver build underlying trust—You understand what I need and can help me feel organized.
- Feeding is the most complex and difficult sensory task
Oxytocin, "The Cuddle Hormone"

- Suppresses the hypothalamic-pituitary-adrenal axis (HPA), to decrease stress, support milk production and aid in digestion.
- Oxytocin is released in response to:
  - Labor and delivery
  - Breastfeeding
  - Skin to skin contact
  - Positive, warm interactions between humans (inc. visual)
  - Massage
  - Smell
  - Suckling
  - Food intake
  - Soothing sound

Keep Calm and Release Oxytocin

The Breast Crawl
**Birth Trauma**

- Sudden
- Birth Trauma
- Overwhelming
- Dangerous

- Effects of Trauma on the Infant
  - Separation from mother/decreased human contact
  - Lack of trust/dear
  - Difficulties with feeding
  - Sensory and physical development is challenged in transition and outside the womb
  - Regulatory Disorders

Charles Figley, Trauma and It's Wake
Regulation Disorders of Sensory Processing

- Hypersensitive: Individuals are easily overwhelmed by the sensory stimuli that are part of everyday life, and they tend to experience considerable stress as they try to manage their intense responses to such stimuli.

- Hyposensitive/Underresponsive: Individuals require high-intensity sensory input before they are able to respond. Children/adults who are hyposensitive seem unresponsive to their environment and unresponsive to overtures from others. Their withdrawn and lack of reactivity usually reflect their failure to reach the threshold of arousal that would motivate them to act and interact.

- Sensory Stimulation-Seeking/Impulsive: Individuals seek out sensory stimulation. They require high-intensity, frequent, and/or long duration sensory input before they are able to respond.

Signs of Regulatory Stress in Baby

- Wide eyes
- Excessive sleeping (shut down)
- Moro response
- Finger/toe splaying
- Tremoring
- Blinking
- Closing eyes
- Yawning
- Turning away/pushing away
- Flushing of cheeks
- Fluctuation in muscle tone (extension or floppiness)
- Agitated movements
- Protection of airway
- Gulp
- Holding breath or increased respiration
- Difficulty with suck/swallow/breathe

Crying is the LAST SIGN of distress!
Assessing Sensory Processing

- Sensory Profile 2
- Infant Checklist (birth to 6 months)
- Toddler Checklist (7-35 months)
- Sensory Profile for Adolescents/Adults

Effects of Trauma on Mother/Caregiver

- Stress of life or death of mother or child
- Feelings of guilt, grief of expected birth
- Feelings of failure, self-blame, inadequacy, loss of control
- Decreased contact with baby

Effects of Trauma on Mother/Caregiver (cont.)

- Breastfeeding grief
- Emphasis on weight/size of baby
- The demands of “independent” parenting can be more challenging
- Negation of parent’s experiences
  “You should be happy to have a baby”.
**Signs of Regulatory Stress in Caregiver**

- Increased heart rate
- Increased respiration
- Tense facial expression
- Sweating
- Increased rate and tone of voice
- Pupil dilation/wide eyes
- Disorganized and quick movements
- Difficulties modulating pressure
- Flushing cheeks
- Lack of responsiveness
- Over-responsiveness
- Disengaging from baby cues (shut down)

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**Feeding After Trauma**

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**The Interplay of Trauma and Sensory Regulation**

Children and parents need to be helped to react differently from their habitual fixed patterns of engagement. Traumatised children need to be engaged in regulating activities that give them a sense of pleasure and mastery. (Van der Kolk 2008). They need to learn about safety and comfort. (Crittenden 2008). Interventions that require children to face their trauma, without first ensuring that they are emotionally safe and that their arousal system is regulated, are traumatising...”

Éadaoin Bhreathnach.
Bringing it all together….

- Sensory strategies may help mother and infant calm before /during feedings improving metabolic capacities of the baby and mother’s overall health and milk production
- By helping the dyad to co-regulate during feedings we decrease the HPA activation via oxytocin release and begin to reduce the negative effects of trauma related stress.
- Feedings based off baby’s cues may help to promote increased maternal sensitivity
- Regular responsivity to the baby’s frequent feeding needs in a way that feels good to both parent and baby may help to establish trust and secure attachment

Experiential

Strategies
**Caregiver Education**

- Encourage prenatal bonding
- Talking prenatally about all of the different ways to connect to baby
- Deep breathing - mindfulness techniques
- Teach parents to be a detective of how they and their baby responds to all types of sensory input
- Encourage parents to enlist help from family/friends/mom groups, encourage participation in groups
- Finding support for relactation or induced lactation for non-birthing mothers
- Referral to other specialists (mental health, occupational therapy, breastfeeding specialist, feeding specialists)

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**Environmental and Routine Based Strategies**

- Rooming in/safe sleeping habits
- Responding to baby’s cues instead of clock or amount of milk to determine when baby is hungry or satiated
- Keep the environmental stimulation at a minimum (especially for pre-term infants)
- Always holding baby during bottle feedings
- Paced bottle feedings
- Alternative feedings to reduce stress

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**Vestibular Strategies**

- Always holding baby while feeding, switch from left to right sides while being held. May need to experiment in order to determine position baby prefers to be held. Do the same for bottle fed babies! (B)
- Rocking while feeding, bouncing gently on a ball, feeding while baby is being worn or walking (B/C)
- Decrease frequent changes in head position for overwhelmed baby - promote slow, predictable movements (B)
- Walking with baby before or after feeding (B/C)

*Strategies for use with medically stable, full term infants.
(C) = Caregiver, (B) = Baby, (B/C) = Baby and Caregiver Strategies*
**Proprioceptive Strategies**
- Weight bearing exercise (as indicated OK to do so by physician) (C)
- Yoga, stroller classes, swimming, running, walking
- Drinking smoothie, milkshake through straw (C)
- Gum Chewing (C)
- Comfortable positioning (B/C)
- Laid back or "natural" breastfeeding position
- Support for arms, neck and back
- Experiment with amount of pressure used to hold baby (B)
- Encourage baby to suck on non-nutritive stimulus to organize before feedings (B)
- Allowing bottle or breast fed baby to pacify at the breast
- Pacifier

**Tactile Strategies**
- Skin to skin (B/C)
- Deep pressure or light blanket as prep/barrier if parent is defensive to touch (C)
- Infant Massage (taught by trained provider) (B/C)
- Baby wearing (B/C)
- Swaddling (B)
- Warmth
- Slightly warmed clothing/blankets (B/C)
- Co-bathing (B/C)
- Warm bean bag placed on neck or tension areas (C)
- Weighted blanket (C)
- NEVER USE WEIGHTED BLANKET ON INFANT!!!

**Gustatory/Olfactory Strategies**
- Blanket/clothing with mother’s scent during separation and feedings by another caregiver (B)
- Mother smelling baby when pumping or away from baby (clothing/blanket) can elicit oxytocin release (C)
- Mother expressing milk and/or putting milk on bottle nipple as an introduction to the feeding (B)
- Taste/smell of human milk changes with mother’s diet (B)
**AUDITORY STRATEGIES**

- Mother’s voice (B)
- Heartbeat (B)
- Soothing/rhythmic songs (1 beat per second) (B/C)
- Be mindful of extraneous noise (B/C)
- Label experiences and validate emotions (B/C)

**VISUAL STRATEGIES**

- Promote face to face interactions (B/C)
- Be aware of baby’s response to visual input in the environment (B)
- Present baby visually with nipple first (B)

**RECONNECTING BY KRISTIN SANDEN**

When they brought you to me and placed you on my chest, skin to skin
kicking softly
as if you were all inside me
then settling into a deep sleep.
I cried with the knowledge
that we were beginning
to fall in love.

When they brought you to my breast
and you opened your mouth
and tasted the milk
that you would grow on
and be comforted by
I wept with joy
feeling at last
that you were mine.
CONTACT INFORMATION

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RESOURCES

- Feeding Matters: https://www.feedingmatters.org/
- SPD Foundation: http://spdfoundation.net
- Spiral Foundation: http://thespiralfoundation.org/
- La Leche League: http://www.llli.org/

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