

# Occupational Therapy's Role in Addressing Feeding Difficulties in the Neonatal Intensive Care Unit

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## BACKGROUND

- The premature birth rate in the United States has steadily increased for the third year in a row, and is now 9.93% (March of Dimes, 2019).
- Advancements in technology have greatly increased the survival rates for these infants. Increased survival rates are accompanied by a multitude of health concerns, including those associated with growth and nutrition (Shaker 2017).
- Feeding difficulties and failure to thrive are some of the leading health concerns associated with prematurity and are the primary reasons for delayed discharge from the Neonatal Intensive Care Unit (NICU) and readmission to the hospital within two weeks of discharge (Fry, Marfurt, & Wengier, 2018; Lau, 2015; Lubbe, 2017; Shaker, 2017; Whetten, 2016).
- Approximately 80 % of infants born prematurely face difficulties with oral feeding, making this the leading developmental issue seen in the NICU (Hardy, Senese, & Fucile, 2018; Lau, 2015; Shaker, 2017).
- In recent years there has been a paradigm shift in NICUs across the world from volume driven to infant driven feeding practices (Lubbe, 2017; Whetten, 2016).
- Infant driven feeding is a safer option for transitioning from enteral feeds to oral feeds. Infant driven feeding allows for individualized feeding that is guided by the infant's cues (Lubbe, 2017; Shaker, 2017; Whitten, 2016).

## METHODS

- Eight deliverables were created to guide advanced clinical practice in the NICU. The overarching goal was to gain an increased understanding of the role that occupational therapy has with treating feeding difficulties associated with prematurity. The following activities were completed to ensure achievement of deliverables:
  - Attend online courses/modules
  - Complete a paper regarding the theoretical concepts that guide feeding interventions in the NICU
  - Conduct an activity analysis to better understand the components associated with feeding
  - Complete educational handouts for parents
  - Complete a reflection regarding the multidisciplinary approach needed to treat medically fragile infants in the NICU
  - Complete a case study highlighting an infant's NICU stay
  - Complete 20 hours in a NICU follow up setting



The Iowa Stead Family Children's Hospital is home to the only level IV NICU in the state of Iowa. A level IV NICU is the highest ranked NICU, and has the technology and medical staff needed to treat the youngest and most medically fragile infants (The University of Iowa, 2019).

## THEORETICAL CONCEPTS

The theory of **occupational adaptation** (OA) describes the process in which occupational function is obtained. An individual's internal drive, coupled by the external demand to master an occupation creates a press for mastery, thus yielding an occupational challenge (Schkade, & Schultz, 1992; Schultz, 2014). Preterm infants often face difficulties with oral feeding due to the immaturity of the structures and skills needed (Lou, 2015; Shaker, 2017). Feeding is an occupational challenge that many preterm infants face and thus adaptive skills must be addressed to promote success with this occupation.

**Ayres' Sensory Integration**® (SI) theory describes how an individual receives and organizes sensory input from his or her environment for functional use (Ayres, 2005; Parham, & Mailloux, 2015). Adaptive responses are created as a result of incoming sensory stimuli, and become more complex with continued exposure (Ayres, 2005; Schaaf et al., 2010). Environmental factors and sensory experiences shape and rewire the ever-changing neural connections of the brain (Ayres, 2005; Parham, & Mailloux, 2015; Schaaf et al., 2010). It is important to have positive environmental and sensory experiences during oral feeding attempts to strengthen the neural connections associating feeding and pleasure.

**Dynamic systems theories** are derived on the bases that multiple systems are interrelated and necessary for participation in occupations (Shaker, 2017). The coordination and maturation of many subsystems is necessary for safe and effective oral feeding (Shaker, 2017).

## IMPLICATIONS FOR OT

- Occupational therapists possess the educational background necessary to work with individuals across a lifespan. Occupational therapists are experts in human development, mental health, sensory integration, and neurodevelopment (American Occupational Therapy Association [AOTA], 2018).
- The paradigm shift from volume driven feeding to infant driven feeding requires the knowledge and skill necessary to appropriately read and react to an infant's cues (Lubbe, 2017; Whetten, 2016). Education for medical staff and parents will be needed for oral feeding success. Occupational therapists have the ideal skills necessary for completing this education.

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