

## Hunger-Based Feeding in the NICU

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By Sandy Keefe, MSN, RN

Cathleen Dehn, MA, MSN, RN, nurse manager of UNC Health Care's Newborn Critical Care Center (NCCC) in Chapel Hill, NC, appreciated a recent report from the Cochrane Library linking hunger-based feeding of premature babies with shorter lengths of stay.<sup>1</sup>

"If we can make the feeding experience a positive one by supporting and being responsive to the baby's cues, we therefore decrease the stress around the feeding process, and we promote growth and development as well as bonding between the mother and baby," she said. "I believe we'll show babies grow faster and may have earlier home-going when we're sensitive to their development and their feeding cues."

### **Cue-Based Feeding**

Kim Guglielmo, RN, a clinical nurse III in the NCCC, shares Dehn's perspective.

"Over my 20 years in neonatal nursing, I've seen an evolution of change to a more baby-driven approach, rather than a nurse-driven or parent-driven one," she said. "Before all the studies of cue-based feeding came out, we would try oral feeding when we thought the babies were alert enough. We'd attempt bottle feeding, moving the bottle around, supporting their chins and actually assisting them with the feedings."

"Over the years, we've found babies give us oral cues such as being alert and awake, rooting, vigorously sucking on a pacifier, and trying to 'eat' our fingers that let us know when they're ready for oral feeding," Guglielmo continued. "Today, we pay attention to those cues and allow babies to bottle feed without moving the bottle around or pushing them to suck and swallow. We've learned the importance of this from cue-based feeding studies."

Guglielmo recalled the early research that Suzanne Thoyre, PhD, RN, associate professor at UNC Chapel Hill's School of Nursing, conducted in the NCCC.

"[We] participated while she was feeding infants, videotaping feeding sessions, and using specialized equipment to measure the babies' abilities to swallow, breathe, and suck," she said.

Thoyre currently has a grant proposal to NIH to teach mothers to pick up on the baby's breathing and swallowing cues that signal the infant's need for maternal support.

### **Empowering Parents**

Neonatal nurses are active participants in decision-making to empower parents of fragile neonates.

"Our feeding committee, family-centered care committee and developmental care committee are three of the twelve committees that develop initiatives to help families deal with the issues around their premature babies," Dehn said. "We promote an environment where nurses understand developmental cues and relationship-based care, and that understanding is critical to support brain development and positive relationships between mom, dad, and the baby. If we promote a positive developmental experience early in the baby's life and offer support for parents to learn these specialized techniques to promote development, then we help pave the way for successful parenting."

Ignoring developmental cues can lead to long-term issues.



**FEEDING TIME:** Kim Guglielmo, RN, a clinical nurse III in UNC Health Care's Newborn Critical Care Center in Chapel Hill, NC, assists parents in feeding triplets. The center uses a cue-based approach to feeding its young patients. (courtesy UNC Health Care)

"If we are not as sensitive to the fragile baby's behavioral cues, the baby can develop an aversion to the feeding process," Dehn said. "When a baby starts to show signs of distress such as a frown, turning away from the nipple, or even displaying spreading fingers, we need to be sensitive to the fact that he or she needs to pause and support resuming feeding when the distress cues are gone."

### **Ad Lib Feeding**

Dolores Ferlauto, RN, a staff nurse in the level II nursery at the Walt Disney Pavilion at Florida Hospital for Children, Orlando, described the ad lib feeding approach used in her unit.

"When a baby is just a few days away from discharge, we may start ad lib feeding, allowing them to take the total volume orally as desired," she said. "The doctor will write an order to work from a QD oral feed to BID, TID, and then every other feeding if the baby is showing readiness cues. A baby who is ready for an oral feeding may turn his head toward the bottle, root, suck actively on a pacifier or other object, appear awake, look around, and show initiative to start a feeding. We look for the ability to suck, swallow, and breathe in a regular pattern."

Ad lib feeding gives nurses the opportunity to evaluate the effectiveness of hunger-based feeding.

"We may do a trial to see if the baby can take the volume desired by oral feeding, and add up the amounts the next day to see if he's met his caloric requirements," Ferlauto said. "We give the baby at least a 30-minute time period to take in the designated volume. After that, we assume he's burning too many calories, and we'll put the remainder of the formula down the nasogastric tube. It doesn't do any good to prolong the feedings so long that one session runs into the next, and that pattern can really tire the baby out."

### **Body Language**

Ferlauto is part of an interdisciplinary team focused on effective oral feeding.

"At one point in the past, nurses operated under the thought that, 'I have two ounces of formula and you need to take the two ounces,' so we would rotate the bottle, move the baby's jaw and take other steps to make him drink," she said. "We don't do that anymore. Instead, we follow recommendations from the speech language pathologists assigned to the NICU, and our unit nurses are working toward certification in the use of the NOMAS [Neonatal Oral Motor Assessment Scale] as well. I recently earned my certification, and can educate nurses at the bedside about how to hold and position the baby, assess the sucking pattern, and watch for abnormalities or disorganized function during feeding."

NICU nurses monitor preemies closely during the oral feedings.

"When a baby has had enough of an oral feeding, or doesn't have the ability or energy to complete the oral feeding, he may show signs of disorganization," Ferlauto said. "He may start with an active pattern of suck, swallow and breathe, but then become tired and continue sucking without coming up for air. The pattern may change to one of two sucks, a swallow and then breathing, or it may be three sucks, a swallow and breathing. These disorganized patterns signal that the baby is getting tired, and we'll typically see increased respiratory effort and changes in heart rate along with those disorganized patterns."

### **Reference**

1. McCormick, F.M., Tosh, K., & McGuire, W. (2010). Ad libitum or demand/semi-demand feeding versus scheduled interval feeding for preterm infants. *Cochrane Database of Systematic Reviews*, 2, Art. No.: CD005255. DOI: 10.1002/14651858.CD005255.pub3.

*Sandy Keefe is a frequent contributor to ADVANCE.*