Sucking variations in breast and bottle feeding
During Normal Nutritive Sucking

Faculty: Marjorie Meyer Palmer

Bottle	Breast
-spontaneous initiation of NS	-delayed initiation of NS
-consistent suck/swallow/breathe ratio	-often inconsistent suck/swallow/breathe ratio
-limited variability in the number of sucks per burst	-wide variability in number of sucks per burst
-NNS does not occur during NS	-NNS occurs intermittently during NS
-two-minute sucking sample in 2 mins.	-two-minute sucking sample takes more than two mins.
-jaw clonus as a sign of disorganization	-frequent jaw clonus
-greater posterior tongue elevation on ultrasound	-more anterior/posterior stripping action on ultra-sound

A Comparison of Bottle and Breast Feeding in the Neonate

Compiled by Marjorie Meyer Palmer

	Bottle	**Breast**
	<u>Disorganized Suck</u>	
Evaluation:		
	# of sucks per burst	in-coordination of
	suck/swallow/breathe	suck/swallow/breathe
	Ratio	
Treatment:		
	suck/swallow/breathe	use of SNS
	Regulation	pump before feeding
	3 suck/pause of 3 seconds	nipple shield
	<u>Dysfunctional Suck</u>	
Evaluation:	A) increased tone resulting in jaw clenching and retracted tongue	
	B) Decreased tone resulting in excessive wide jaw excursions and flaccid tongue	
	C) lack of rate change between NNS and NS	
Treatment:	A) longer nipple, dropper, finger feeding,	prone, side-lying, nipple shield finger feeding
	B) jaw support, cheek support	jaw support, cheek support
	C) peri-oral stimulation Rocking at rate of 1/second	peri-oral stimulation rocking at rate of 1/second

Evaluation of Reflexive Neonatal Sucking During Breast Feeding Based upon the NOMAS® (Neonatal Oral-Motor Assessment Scale)

1. Be sure to observe the start of nutritive sucking (rate of 1/second)

2. Rule out dysfunction: excessively wide jaw excursions and flaccid tongue; jaw clenching with tongue retraction

3. Observe coordination of suck/swallow with respiration. If well coordinated suck is usually normal. Signs of disorganized suck at the breast may include one or more of the following:

    *Difficulty with the coordination of pharyngeal swallow and respiration manifested by gulping sounds (audible swallows)
    *Pulling back of head
    *Head turning
    *Struggle to breathe with nasal flaring
    *Wiggle behavior, finger splays, movement of upper extremities

REMEMBER: A change in the suck/swallow/breathe ratio as well as variability in the number of sucks per burst are common occurrences during breast feeding.

Consultants' Corner

Recognizing and Resolving Infant Suck Difficulties

JC is an IBCLC with a private practice in a midwestern city. At a recent ILCA affiliate meeting, JC discussed the challenges of working with infants who have a disorganized or dysfunctional suck. JC and her colleagues agreed that the majority of infants with initial breastfeeding difficulties respond well to common interventions such as proper positioning and encouraging a deep latch. However, every now and then, they come across an infant who does not respond to their repertoire of interventions. For example, JC has had limited success in working with infants with jaw clenching. Although JC is in most cases able to recognize the specific deficit preventing nutritive sucking, she does not feel qualified to provide therapeutic interventions. Other lactation consultants at the meeting that day voiced a need for a therapist in their area that specializes in oral-facial therapy for the breastfed infant. There was general acknowledgment of the importance of health care practitioners knowing their limitations and referring clients to other specialists when needed. The dilemma faced by JC and her colleagues is the lack of specialists to whom they may refer clients. JC rhetorically asked, how do we find these specialists and evaluate their qualifications? What do we do when a specialist cannot be found?

Invited Response from Marjorie Meyer Palmer, MA, LSP

It is now possible to diagnose both disorganized and dysfunctional sucking in the neonate. This differentiation is often subtle and requires a special certification in the scoring and administration of the NOMAS®.[1] The 28 characteristics of sucking as identified by the NOMAS® allow for a fine discrimination between these reflexive sucking patterns. Disorganization of suck refers to a lack of rhythm of the total sucking activity,[2] which means that the infant is unable to coordinate suck and swallow with respiration. When an infant has a disorganized suck, he is unable to feed well and may exhibit labored breathing with color changes and/or spells of apnea and bradycardia. By comparison, a dysfunctional suck is characterized by abnormality in orofacial tone. When there is orofacial hypertonia, it may result in a restriction in the range of motion at the temporomandibular joint resulting in minimal jaw excursions and/or tongue retraction. When the posterior tongue is humped against the palate during sucking, a "clicking" sound is heard and sucking activity is described as noisy. This may also occur when the breast is not placed correctly in the mouth and does not fill the oral cavity or contact the posterior portion of the tongue. If repositioning does not help and mother complains of pain, there may be a more serious problem. When there is orofacial hypotonia, one may note a flaccid tongue and/or excessively wide excursions of the jaw with sucking. A dysfunctional suck pattern in the neonate has been correlated with later developmental delay at 24 months of age.[3,4] For this reason, a referral to an experienced professional is necessary. Infants with a dysfunctional suck will require therapeutic intervention to provide compensatory strategies during oral feeding. The overall prognosis for an infant who presents with a disorganized suck, however, is much better because the ability to suck/swallow/breathe in a coordinated fashion improves with neurological maturation and development.

Because the flow rate is variable during breastfeeding, the diagnosis of the sucking pattern for a breastfed

Consultants' Corner is a forum for the timely exchange of ideas, approaches, and opinions on lactation management issues. Readers are invited to share their experiences and opinions related to the case presentation and management plan. Submissions should be directed to the *JHL* editorial office and must be typed, double-spaced, and limited to 800 words. Submissions sent by e-mail (*jhl@ucdavis.edu*) or fax (530-752-7582) are encouraged. If you have particularly challenging breastfeeding cases that you would like to see discussed in the column, please let us know. We hope that Consultants' Corner will provide a convenient means to share your ideas, skills, and experiences in dealing with lactation challenges.

Marjorie Meyer Palmer is a speech pathologist, clinical instructor, and specialist in neurodevelopmental treatment and feeding disorders in the Department of Pediatrics at the University of California, San Francisco. Address correspondence to Marjorie Meyer Palmer, Department of Pediatrics, University of California, San Francisco, 3760 Yale Way, Suite 1A, Fremont, CA 94538, USA.

J Hum Lact 18(2), 2002

baby presents more of a challenge than that for the bottle-fed infant. When an infant on the bottle demonstrates too much variability in the number of sucks per burst or an inconsistent suck/swallow/breathe ratio, it is a clinical sign of a disorganized suck, whereas if an infant at the breast demonstrates this, it may be a sign that the infant has good adaptability and adjusts well to the variables inherent in the breastfeeding situation. A reliable clinical sign of a disorganized suck pattern at the breast is labored breathing with nasal flaring indicative of the inability of the infant to coordinate suck and swallow with respiration.[5] The evaluation of oral-motor patterns during reflexive sucking is not dependent on whether the infant is breastfed or bottle-fed. Characteristics of jaw and tongue movement may be accurately evaluated in either situation. Reflexive sucking is neurological and has little to do with environmental changes. However, it is advisable to evaluate the infant using the most familiar situation because some infants, particularly those who are premature, may demonstrate poor adaptability and do not easily change between breast and bottle.

Professionals certified in the use of the NOMAS® are usually available to come to the aid of the lactation consultant who suspects that a baby will require specific therapeutic intervention. Contacting the neonatal intensive care unit at a local hospital to request the name of the therapist who provides treatment for the babies with feeding problems in their unit would be a good place to begin. In addition, one should find out whether that professional is NOMAS® certified. A professional who is NOMAS® certified is able to accurately and reliability diagnose the sucking pattern of an infant at both the breast and bottle and to recommend appropriate treatment based on the diagnosis. The NOMAS® course addresses the differences in breastfed and bottle-fed infants and appropriate treatment approaches, and course participants often have the opportunity to evaluate breastfed infants at bedside in the intensive care and/or special care nurseries. In addition, many therapists are lactation consultants. A registry of certified professionals is available through Therapeutic Media, 1528 Merrill Road, San Juan Bautista, CA 95045, USA, for $3.00, or telephone (510) 651-2285 to inquire about a certified NOMAS® professional in your area. People interested in becoming NOMAS® certified may call the same telephone number or fax a request for information to (831) 623-9007.

References

1. Palmer MM, Crawley K, Blanco I. The Neonatal Oral-Motor Assessment Scale: a reliability study. *J Perinatol* 1993;13:28-35.
2. Crook CK. The organization and control of infant sucking. *Adv Child Dev Behav* 1979;14:209-252.
3. Palmer MM, Heyman MB. Developmental outcome for neonates with dysfunctional and disorganized sucking patterns: preliminary findings. *Infant-Toddler Intervention: Transdisc J* 1999;9:299-308.
4. Hawdon JM, Beauregard N, Kennedy G. Identification of neonates at risk of developing feeding problems in infancy. *Dev Med Child Neurol.* 2000;42:235-239.
5. Palmer MM. Identification and management of the transitional suck pattern in premature infants. *J Perinat Neonat Nurs* 1993;7:66-75.