Non-Nutritive Sucking in Pre-term Infants on the Full Breast

I agree with Dr. Narayanan delegating the pacifier to the second place as a method for non-nutritive sucking(1). But in partial modification, I suggest that the baby be allowed to suck at the full breast. This, in my experience, has the following advantages:

(*i*) Prior stimulation by the infant results in better emptying of the breast on subsequent manual expession. This, in turn increases milk production.

(*ii*) Mother (and relatives) generally don't like tubes sticking out of the infant. So, once the infant starts sucking, she considers the feeding tube to be superfluous. Expressing the breast after the child suckles, proves (to the mother and relatives) that the baby is unable to empty the breast and needs artificial aids. This secures better co-operation from them.

If allowed to suckle under supervision of a nurse, there is hardly any risk of aspiration by the child, as little if any milk is ejected; and what little is obtained, is easily swallowed by the infant (unlike from a feeding bottle).

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Reply

Very small and weak babies generally do not have the capacity to accept a 'full breast' adequately. The risks of aspiration are also higher in such infants and it is not always possible to give such close supervision. Further, they will definitely swallow a significant amount of milk, far more than they would be sucking on the 'emptied breast'. At the same time the amount will usually be insufficient to provide optimal nutrition.

The aim of the intervention of sucking on the 'emptied' breast was, therefore, devised to cater to such high risk infants *before* they can accept full breast feeds, not only to encourage sucking but also to promote milk flow. Obviously the final aim is to encourage direct breast feeding. Further details of the methods are being published.

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Why Dilute Feeds?

Recently, Sarna *et al.*(1) have shown that preterm infants tolerate double volume of diluted feeds without many complications. Their study though interesting has left some questions unanswered in our minds. Firstly, we wonder why babies less than 1.25 kg were given 3 hourly feeds. Ideally such babies should receive hourly or 2 hourly (for 1-1.25 kg group) feeds, as has been recommended(2,3). Prolonged interfeed intervals may predispose these babies to hypoglycemia especially once the continuous flow of glucose through intravenous fluids is stopped.

Secondly, they have not mentioned the increments beyond 48 hours. Even the increments shown are not uniform, and Group B babies must not have received exactly half the volume of feeds as Group A. For example a 1.6 kg baby in Group A would receive 44-48 ml and 112 ml on days 1 and 2; while in Group-B a baby of similar weight would receive 32 ml and 60 ml on days 1 and 2. Consequently, the caloric intakes of both the groups are likely to have been different. Thirdly, according to the study protocol the babies in Group A must have reached the 150 ml/kg/day a day prior to reaching 100 cal/kg/day; and in Group B both must have reached it on the same day. *Table V,* however, shows different values (albeit the difference is small).

We also do not subscribe to the idea of administering dilute feeds to well preterm babies. Earlier, authors have recommended dilution of feeds in either very low birth weight infants(2) or neonates at risk for developing necrotizing enterocolitis(4). The physiological basis for this has been the belief that gradual introduction of feeds of dilute concentration, starting with small volumes allows for a build up of mucosal bulk, brush border enzymes and pancreatic function before full feedings are introduced(5). Another reason advanced is that dilute milk being less osmolar is likely to be emptied faster from the stomach(6).

These arguments actually support the basis for giving diluted milk feeds to convalescing preterms. We prefer to administer expressed breast milk to well preterms and do not think the findings of Sarna *et al.* can be extrapolated to such babies. Besides diluting human or formula milk also carries with it a theoretical risk of introducing infection. Perhaps, Sarna *et al.* should have added a third group in their study consisting of matched preterms who had been fed undiluted human milk in amounts comparable to Group B.

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4. Brown EG, Sweet AY. Neonatal Necrotizing Enterocolitis. New York, Grune and Stratton, 1980, p 188.
5. Avery GB, Fletcher AB. Nutrition. *In:* Neonatology, Pathophysiology and Management of the Newborn, 3rd edn. Ed Avery GB. Philadelphia, J Lippincott Company, 1987, pp 1181-1182.
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Reply

We are pleased with the interest shown by Shenoi and Narang in our study. We would like to clarify the doubts raised by them on the issue. The routine in our