

# Lactation Failure – Myth Or Reality ?

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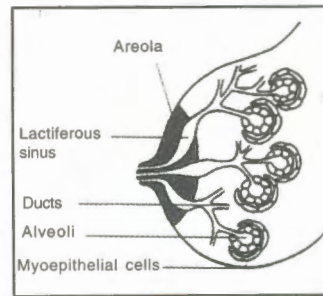
Mother's milk is the universally acknowledged ideal and complete food for her own baby. It satisfies not only the nutritional requirements of the baby but also has immunological factors and a variety of growth factors. Breastfeeding is instinctive and most mothers take to it naturally. However, at the slightest problem they encounter, they switch over easily to top milk. In a study carried out in 1980 to analyse the trends in breastfeeding in mothers who attended the OPD of a teaching hospital, it was observed that 2.8% of mothers did not attempt to breastfeed their babies from birth, 26.5% of them supplemented breastfeeds with topfeeds right from birth and of 32.6% of all mothers gave up breastfeeding by the third month of life (Fernandes et al 1980). The most important reason for resorting to top feeds in this as also in other studies (Gopujkar et al ) was the mother's complaint of "inadequate milk production."

Total or partial lactation failure or low milk production is a situation that finds no parallels in other species. Does such an entity truly exist in homosapiens or is it the price we pay for civilization, spurred on by the availability of alternatives in the market? In order to understand the factors associated with low milk production, let us first take a look at where and how milk is produced and how it reaches the baby and the factors that could affect the milk production at each stage.

## Production of & release of mother's milk :

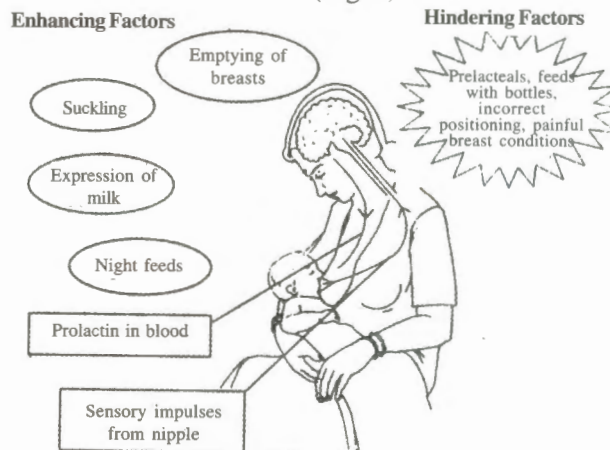
Milk is produced in the tubuloalveolar glands of the breast. This glandular tissue is embedded in fat, giving the breast the round contour and size. Practically speaking, the amount of glandular tissue in the breast is similar in amount in all women. Thus, every woman can produce milk, milk production does not depend on the size of the breast. However, Neifert et al in 1985 reported 3 mothers who had lactation failure due to insufficient glandular development of the breast. Supportive evidence for this included absence of typical breast changes with pregnancy, failure of postpartum breast engorgement to occur and obvious hypoplastic development of at least one breast. (Fig I). Milk production in the breast depends

(Fig I).



on the hormone prolactin secreted by the pituitary. When the baby suckles at the breast nerve endings surrounding the nipple and alveoli are stimulated. Impulses pass via the hypothalamus to the pituitary to secrete prolactin. This

(Fig II).



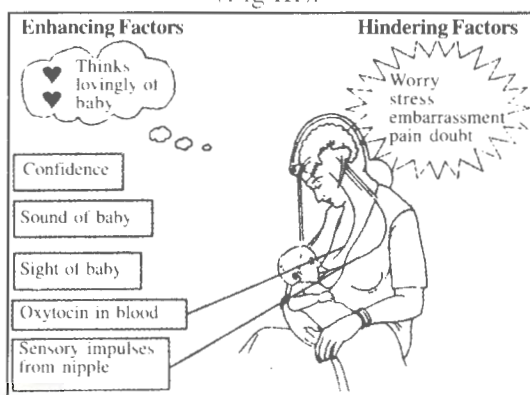
hormone passes through the mother's blood stream to the breast epithelial cells to produce milk. Thus, more frequently, vigorously and effectively the baby suckles at the breast, the more is the amount of prolactin secreted and milk produced. (Weitjhan et al) (Fig II).

Primary hypoprolactinemia is very rare. Sheehan's syndrome due to post partum haemorrhage is also rare as a cause of lactation failure (0.01 % to 0.02 %) of post partum women. Thus regulation of milk production is based primarily on milk demand by the baby. In fact the sucking stimulus is so powerful in increasing prolactin levels that Namba K (1994) has reported 89% success in inducing lactation in 27 nonpuerperal women.

Factors that suppress prolactin production include delayed feeding, use of prelacteal feeds, dummies, pacifiers, bottles and certain pharmacological suppressors like L-dopa, ergot preparations, and large amounts of pyridoxine. Three cases of failure of lactation were reported by Neifert et al (1981) following retention of the placenta. The milk flow was spontaneously established after the placental fragments were removed.

The ejection of milk from the breast or the milk ejection reflex is under the influence of the hormone oxytocin. Oxytocin is secreted by the posterior pituitary in response to sucking stimulus. It reaches the mother's breast via the blood stream. Oxytocin stimulates the myoepithelial cells which are smooth muscle cells that forms a basket like arrangement around the alveoli. Contraction of these myoepithelial cells causes the milk from the alveoli to move forward through the ducts and to be ejected out through the nipple. (Fig III)

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Although both oxytocin and prolactin release are stimulated by suckling at the nipple, some oxytocin is released by other sensory pathways such as visual, tactile, olfactory and auditory. Thus the milk ejection or 'let down' reflex may occur on seeing, touching, hearing, smelling or even thinking about the infant. On the other hand, mother's lack of confidence in her ability to breastfeed, worry, anxiety and embarrassment are some factors that may interfere with this reflex and thus the most common cause for failure of the ejection reflex is psychological inhibition. The human pituitary has excessive storage capacity (1300–9000 mU) for oxytocin of which reflex milk ejection only involves the release of 50–100 mu, thus except in extreme cases (Sheehan's syndrome) hormone depletion is rarely an issue. (Neifert et al, 1981)

### How the baby obtains milk

Milk flows from the breast to the baby by a combination of two processes –

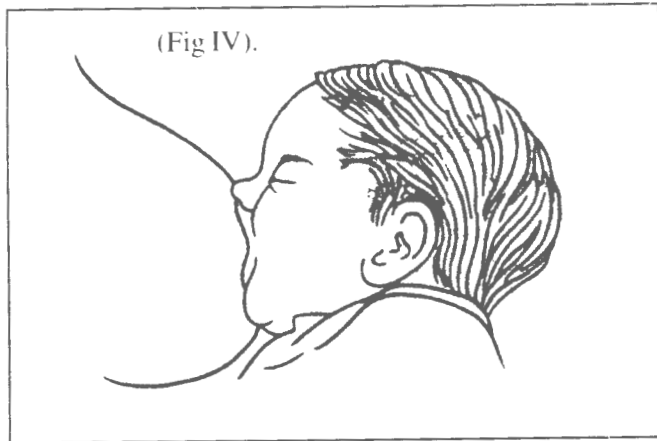
- \* Active removal of milk by the baby
- \* Active milk expulsion by the breast due to the let-down reflex.

Both processes are necessary to ensure that the infant obtains the full volume and nutrient content of the breastfeed with minimum efforts and in a short duration of time.

The baby is endowed with two reflexes that enable him to obtain the milk. The rooting reflex helps the baby to locate the nipple. When the mother feeds her baby and her breast touches the baby's lip, cheek or side of mouth, the baby turns towards the stimulus opens his mouth and searches for the nipple with an open mouth.

The suckling reflex, helps the baby draw out milk from his mother's breast. A point of note is that the milk that is formed in the alveoli, passes along the ducts and collects in dilated sacs called the lactiferous sinuses which are situated beneath the areola and their ducts then open out onto the nipple. Thus in order to effectively express the milk out of the lactiferous sinuses the baby must draw

both the nipple and areola into his mouth to form a teat. Then the stretched teat is pressed against the palate by the tongue and jaw and wave-like squeezing movements of the tongue helps to express out the milk from the lactiferous sinuses. Though breastfeeding is instinctive good attachment at the breast is a skill which must and can easily be learnt by both mother and baby. (Fig IV).



The technique of suckling at the breast is quite different from bottle feeding. Suckling at the nipple of a bottle already filled with milk requires less effort to draw out milk. Here the baby uses his tongue only to control the flow of milk into his mouth. A baby who has been fed with a bottle therefore finds it difficult and confusing to suckle at the breast. Even one or two bottle feeds can cause nipple confusion and interfere with successful lactation. (Neifert et al 1995)

### How to help prevent low milk production

Thus, as has been discussed so far, low milk production in a mother due to primary causes like hypoplastic breasts or primary hypoprolactinemia occurs extremely rarely. In most mothers with this complaint, the cause of the low milk production is a secondary one. This secondary hypoprolactinemia is induced by faulty hospital policies and practices or by improper techniques of feeding.

Very often the practices that are followed by the maternity homes and hospitals right from the antenatal period through to the time the baby is born and finally discharged from the hospital may not be conducive to successful

initiation and maintenance of breastfeeding. WHO and UNICEF have laid down 10 steps to successful breastfeeding. (WHO, 1989).

The first step towards improving the status and incidence of breastfeeding, is that the unit providing maternity services should have a written breastfeeding policy that all health care staff should know and implement

Since women have confidence in their obstetricians, they are also likely to respect their opinion regarding advice on infant feeding. A single antenatal breast examination coupled with advice and motivation for breastfeeding goes a long way to help the successful establishment of lactation (Dalal et al 1992). In a study carried out by Johnson, he observed that there was a significantly greater number of women who continued to breastfeed at one month postpartum in the group of mothers who received a short bedside personalised teaching session compared to those mothers who received just a card with the name and phone number of a professional feeding advisor and another group who received the card plus a manual containing information that had been given at the teaching session (Johnson et al 1984). In another study, the duration of breastfeeding was almost doubled when fathers also received the information. (Chateaur et al 1977).

There is currently enough evidence to show that the positive practice of early feeding results in a greater likelihood of babies remaining breastfed for a longer duration (Salaria et al 1978). All healthy babies who have no prenatal problems should be put to the breast within two hours preferably within the first half hour after birth.

Normal healthy newborns do not require any type of prelacteal feeds, as colostrum is sufficient to meet the needs of the newborn baby. The administration of prelacteal feeds interferes with sucking and prolactin production and ultimately undermines the mother's confidence in her ability to breastfeed (Donald, 1985). Feeding the baby on demand i.e. whenever he cries becomes easy when the mother and baby are nursed together in the same room and in the same bed.



Thus in summary, Antenatal preparation and motivation of the mother to breastfeed, early initiation of breastfeeding, encouraging mothers to feed colostrum as against the use of prelacteal feeds, rooming-in the mother and baby and encouraging unrestricted feeding on demand both day and night are some of the practices that should be followed and would significantly help reduce the occurrence of secondary lactation failure.

### **How to help an individual mother with low milk production**

It is important to remember that just as a headache or a pain in abdomen is a symptom with a variety of underlying causes, so too low milk production is a symptom and its effective management is not palliation by resorting to an alternative to mother's milk but by trying to establish the underlying etiology and managing it appropriately.

Fortunately, no fancy investigations like MRI, CT are required to pinpoint the etiology, just a systematic history regarding the perinatal events and feeding practices in the early neonatal period and examination of the mother-infant couple along with the observation of a feed.

The commonest reason why a mother feels that she has insufficient milk is because the baby cries a lot. From the clinician's viewpoint therefore it is necessary to ascertain whether there is a genuine problem and whether the baby is getting sufficient milk or not.

A baby who is on exclusive breastfeeds and is showing appropriate weight gain of 18 – 30 grams a day or 500 – 1000 gms per month and who passes urine at least 6 – 8 times in a day is definitely getting sufficient milk and this is a mother who requires only positive support and a reiteration of the adequacy of her milk for her baby. Mothers need to be told that babies cry for a variety of other reasons and not only because of inadequate feeds.

If on the other hand, the weight gain is inadequate and the baby is exclusively or partially breastfeeding, we need to enquire about the feeding practices i.e. the number and length of breastfeeds. We need to ensure that the

baby is being fed frequently on demand and that the mother allows the baby to feed at one breast for as long as the baby wants. This ensures that the baby gets the benefit of both the foremilk (which is rich in water and lactose and quenches the thirst of the baby) and the hindmilk which is rich in fat and causes a sense of fullness in the baby so the baby sleeps well and gains weight well. If the mother feeds on each breast by the clock the baby may get only the fore milk from both breasts which contains water and lactose. Such a baby would wake early, cry frequently for feeds which the mother then interprets as "inadequate milk for the baby" (UNICEF 1996).

After having elicited history the baby should be examined for local problems like cleft palate, oromotor dysfunction and systemic problems like prematurity, illness or a CNS defect. These babies need help in feeding at the breast or the mother can supplement the breastfeed with her own expressed breast milk fed by wati and spoon.

Next the mother needs to be examined for a local problem like an inverted or a sore nipple or for any systemic illness which requires prompt management.

Though breastfeeding is instinctive and most mother-infant couples take to it naturally, breastfeeding has a technique that sometimes needs to be learnt.

Hence another important step is to observe the mother-infant couple during a breastfeed to check on the technique of feeding.

A mother may feed her baby in any position that is comfortable for her, i.e. she may lie down or sit on a chair, on the bed or on the floor and feed. By and large mothers tend to sit and feed their babies during the working hours. Points to emphasize to the mother regarding her position would be that the mother should sit up straight with her back supported by the wall or a pillow or chairback and lift the baby to the level of her breast rather than bending down to feed her baby. If the mother bends while feeding the baby, her back may start to ache before the baby completes a full feed. To remove the discomfort the mother may prematurely terminate the

feed before the baby has got the benefit of the hind milk. Such a baby will awake faster, cry more, giving the mother an impression that she has less milk when the problem is simply one of a wrong technique.

Just like the position of the mother is important to successful breastfeeding so too is the position of the baby. The baby needs to be held such that he is close to the breast and has easy access to it without having to crane his neck while feeding. Thus we must show the mother how to cradle her baby in her arms facing her breast and so that the baby's abdomen touches the mother's abdomen and the baby's mouth is close to the mother's breast. In such a position the baby is able to get properly attached to the breast or is well "latched on".

By proper attachment to the breast we mean that the baby takes not only the nipple but also a significant part of the areola with underlying lactiferous sinuses into his mouth.

When we observe a mother infant couple feeding, after observing the position of the mother and that of the baby, we observe whether the baby is well attached. A baby is said to be well attached when his mouth is wide open, the lower lip is everted and not much of the areola can be seen because most of it has gone into the baby's mouth. (Fig V).

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Improper feeding technique with incorrect attachment to the breast is one of the major causes of poor lactation performance. When the baby inadequately empties the breast, the prolactin levels in mother's blood ultimately fall due to lack of effective suckling stimulus for prolactin production. Problems with attachment to the breast occurs more commonly if the baby has received few bottle feeds. In addition improper attachment to the breast also results in a number of breast and nipple problems like congested

breast and sore or fissured nipples. Experiences from a lactation management clinic reported faulty position in 47.2 % of patients with low milk production, a cracked nipple in 7.5 % of the patients, congested breast in 3.5 % of the patients all of which could be corrected by improving the technique of feeding. (Nanavati et al 1994)

No obvious cause for inadequate milk production is reported from the experience of lactation management clinics. In most of these, mother's lack of self confidence in her ability to breastfeed often results in inhibition of the let down reflex. This is often compounded by a careless word by the care givers like the mother in law, nurses or doctors. Psychological support to the mother in the form of instilling confidence and reassuring her that she is capable of producing the best milk for her baby is an extremely important form of therapy as seen in 69.7 % of mothers (Nanavati et al 1994).

Thus in order to help a mother increase her milk production we need to provide psychological support, identify and treat the underlying problem, teach the mother to correctly attach the baby to the breast, stop using bottles and pacifiers. The mother should be encouraged to breastfeed frequently and for a sufficient length of time.

### **Role of galactagogue**

Galactagogues are special food, drinks, herbs or medications like metoclopramide and chlorpromazine which can increase a woman's milk production. They act by increasing the prolactin secretion. They also work psychologically and have a marginal effect on milk production. The best galactagogue is a baby suckling at the breast in a correct position.

Thus, in conclusion, primary lactation failure is an extremely rare event. Most cases are due to secondary failures due to conditioned factors like hospital practices that are non conducive to breastfeeding coupled with lack of self confidence in the mother, improper techniques, etc.

With the help of supportive breastfeeding policies that

constitute the foundation for initiating of successful breastfeeding, constant reinforcement and support to all lactating mothers the term 'lactation failure' could easily be proved a myth !

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