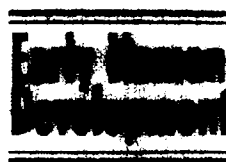




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# Relactation

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## Abstract

Relactation may be useful in the developing world either if the child has been ill and unable to feed for a time or the mother is ill or has died. Relactation appears to be easier with a younger infant and in women who have lactated previously. However, with appropriate care, support and motivation even some women who have never been pregnant or who have been pregnant but never lactated may be able to start lactation. © 1997 Elsevier Science Ireland Ltd.

*Keywords:* Relactation; Developing countries; Breast feeding; Lactation

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## 1. Introduction

Relactation, also known as induced lactation has been defined as “the physiological process whereby human lactation is initiated at a time unrelated to the postpartum production of milk” [1]. Some of the methods used for relactation may also be useful where it is necessary to increase the milk supply of a woman who is already lactating. There are several situations where the need for relactation may arise. It may follow untimely weaning of a baby due to separation from its mother, for example after hospitalisation of either the mother or infant. A mother may wish to resume breastfeeding an infant who is found to be unable to tolerate formula milk. Alternatively, a woman may wish to breastfeed an adopted infant, or a mother may be ill or die and a relative take on the role of breastfeeding the child.

## 2. Stimulation of milk supply

Several books and articles have been written advising women who wish to relactate on the best way to go about inducing a milk supply [2–5]. Similar advice is given in

all of these. All suggest that it is important for the mother to look after herself well, to eat well, drink enough fluid and to rest sufficiently. The chance of inducing a good milk supply is said to depend on a number of factors of which the degree of breast and nipple stimulation is probably the most important. Adoptive mothers are advised to stimulate the breasts for four to six weeks before the arrival of the baby, using hand expression, an electric pump or some other method. All mothers are advised to put the infant to the breast as often as possible. In order to avoid 'nipple confusion' it is suggested that supplementary feeds should not be given using a bottle with a teat. (For the same reason the use of pacifiers is not recommended). Instead, it is suggested that a spoon, dropper or nursing supplementer should be used. (A nursing supplementer, for example 'Lact-Aid', is a device allowing a baby to drink formula milk through a tube attached next to the mother's nipple. Thus the mother's breast is stimulated while the baby takes a formula feed, hopefully building up her own milk supply at the same time). The characteristics of the baby are also said to affect the chances of successful lactation. The willingness to nurse and ability to suck effectively will depend upon the baby's age, whether he or she has ever been breastfed, and the length of time which has elapsed since the last breastfeed.

Other factors said to be of importance in establishing a good supply of milk are that the mother is relaxed, and has a strong support group encouraging her in her effort to breastfeed. Various hormones, drugs and certain herbal preparations may be helpful, but their use should be discussed with a doctor. Oxytocin nasal spray is a commonly used hormonal preparation. As the mother's milk supply increases the amount of formula supplement given to the baby should gradually be reduced, although care should be taken to ensure that the baby continues to show satisfactory growth.

### **3. Studies of relactating women**

A number of studies have been conducted on women who have relactated. These have attempted to determine the ways in which mothers prepared for relactation, the degree of success they achieved and those factors which made successful relactation more or less likely. One of the largest of these is a retrospective study of 366 self-selected women from the United States and Canada by Auerbach and Avery [6]. These women completed a self-report questionnaire about their relactation experience.

Three situations had resulted in the need for relactation in this group: untimely weaning of the infant, the birth of a low-birth-weight infant, or hospitalisation of the mother and/or infant. Preparation for relactation took several forms. Dietary supplementation was common, with most mothers increasing their fluid intake and nearly half increasing their protein intake. Half of the group used oxytocin nasal spray to enhance the milk ejection reflex, but use of other hormone preparations was rare. Various methods of nipple stimulation were used of which infant suckling was cited as the most effective, followed by breast massage and nipple-rolling exercises and use of electric or hand-operated breast-pumps. Mothers of low-birth-weight

infants were less likely to cite infant suckling as the most effective source of nipple stimulation and were more likely to find breast pumps helpful.

Several factors affected the infants response to the breast. The willingness to suckle decreased as the age of the infant increased. However, at each age the willingness to nurse improved over time, and by a week after first being put to the breast the majority of infants were willing to nurse. Among low-birth-weight infants the lower the birth-weight the longer before it was put to the breast and the lower the willingness to nurse. Furthermore, infants weighing less than 1361 g at birth showed very little increase over time in willingness to suck.

Most mothers supplemented their own milk supplies for some period. The most helpful method of supplemental feeding was felt to be the Lact-Aid nursing supplementer. Fifty-seven percent of the mothers had eliminated supplements by four weeks after the start of relactation, and only 24% were never able to completely eliminate them.

A study by Bose et al. was similar in that most of the mothers attempting to relactate had been unable to breastfeed due to the infants being sick or premature (although one was an adoptive mother) [7]. However, in this case only seven women were studied and they were recruited into the study before the process of relactation began. All women in the study gave supplemental feeds using the Lact-Aid nursing supplementer. Although all but one infant was initially reluctant to suckle, all were entirely nourished at the breast (with or without the nursing supplementer) by the end of the first week. Three mothers eventually fully breastfed their infants—these were the only three in the group to have incomplete post-partum breast involution. Two mothers provided at least half of their infants nutritional requirements through breast-milk. The adoptive mother and one other woman produced only insignificant amounts of breast-milk. The time taken to reach maximum breast-milk production varied from 8 to 58 days and seemed to be related to the length of time since parturition and to the degree of post-partum breast involution.

The prolactin levels of the mothers were also investigated. The basal and stimulated prolactin levels were measured on the first day of the study, and the levels before and after suckling were measured several times during the course of relactation. All women had an increase in serum prolactin levels following suckling, but, prolactin levels were not predictive of the amount of milk produced nor of the likelihood of successful relactation. Most of the mothers found initiating relactation to be a stressful process, and the authors felt that a support system was essential for success.

The literature advising mothers on how to relactate and the results of studies on relactating mothers suggest that increasing age of the infant and/or time since last breastfed will decrease the chances of successful relactation. However, a report from Australia suggests that this is not the case in older infants with a long history of successful breastfeeding [8]. Six cases of relactation in the mothers of children aged from twelve months to four years are described. The children had been weaned for between one week and six months but none had lost the ability to breastfeed effectively. In each of the mothers a supply of breastmilk was quickly induced by suckling alone. The author suggested that the psychological state of the mother might

have facilitated the process of relactation. None of the mothers were intending to relactate, thus there was no performance anxiety.

#### 4. Adoption and relactation

Two large studies of breastfeeding by adoptive mothers have also been conducted. In both of these the adoptive mothers completed a self-report questionnaire covering past nursing episodes. The first was a study by Elizabeth Hormann of 65 women who had nursed adopted babies [9]. The women were divided into three groups, those who had never been pregnant nor lactated (NP,  $n = 18$ ), those who had been pregnant but had never lactated (PNL,  $n = 7$ ) and those who had been pregnant and had lactated previously (PL,  $n = 40$ ).

The most common methods of breast preparation for nursing were hand expression and use of a hand pump. Thirty-three percent of the women reported that milk was already present in the breasts when preparation for adoptive nursing began. Milk appeared before the arrival of the baby in 35 women. (However, not all women were preparing for the baby's arrival, and neither the percentage of women preparing for lactation nor the length of preparation time was stated). The amount of milk present during preparation for nursing was noted to be more than drops in eight women, all of whom were in the PL group. Milk was noted to be present less than two weeks after beginning preparation by fifteen women.

Hormann chose to describe a woman as having lactated successfully if the minimum amount of formula given to the baby over 24 hours was 16 oz or less. A greater proportion of those who had previously lactated were successful. However, the mean least amount of formula given was lowest in the NP group, and neither prior pregnancies nor prior lactation was necessary for successful adoptive nursing. Successfully lactating mothers were more likely to nurse their babies for over 30 minutes at a time, and the frequency of nursing and total nursing time were greater in this group. Only one mother (in the PL group) eventually completely nourished her baby without the use of any supplementary formula.

The second study was of 240 women who had nursed an adopted baby [10]. These women were divided into the same three groups, NP ( $n = 85$ ), PNL ( $n = 55$ ), PL ( $n = 102$ ). Preparation for induced lactation took several forms. Eighty percent of the mothers supplemented the diet in some way. Most mothers used two or more forms of nipple stimulation, including infant suckling, nipple exercises and hand-operated or electric pumps. Of these the most effective techniques were said to be nipple exercises and infant suckling. Half of the women reported being able to express milk before the baby's arrival.

Three quarters of the infants were willing to suckle by the end of the first week, with willingness to suckle decreasing with increasing age at introduction to the breast. Most women supplemented their own milk supply—the majority used a Lact-Aid nursing supplementer for at least some of the supplemental feeding. Fifty-four percent of women continued to use supplements throughout the infants' nursing careers—this was a third less likely if the mother had lactated previously.

It has been suggested that if a woman is already nursing an older biological infant she may easily increase her milk supply to meet the needs of a younger one [2,4]. Eighteen of the women in this study were tandem nursing an older infant, however, they were no more successful in meeting the adopted infants' needs than the others.

## **5. Relactation in the developing world**

There are numerous anecdotal reports of relactation. Brown describes several cases in the Third World [1]. In one, a starving mother in Uganda was said to have relactated after being placed on a high-protein, high-calorie diet. In another, women in Saigon were induced to relactate with the help of low doses of chlorpromazine and used as wet nurses in orphanages. A Bangladeshi mother whose breast milk had dried up while her twin infants were being treated for gastro-enteritis relactated on putting her infants to the breast and receiving doses of Thorazine (Largactyl) for ten days [11]. Several cases of adopted infants being fully breastfed have been described [2,12], both with and without a previous pregnancy. In many cultures relactation is an accepted fact, and an emergency method of feeding children following the death of the mother. In this situation the infant is customarily given to a female relative to rear and feed. If she is not lactating, lactation may be induced by putting the infant to the breast frequently and possibly by the use of herbal medicines. Such induced lactation has been described in the Yoruba community of Nigeria [13], in middle-aged Zulu women [14] and in middle-aged Australian aboriginal women [15,16].

One very enterprising study in India documented attempts to start lactation again in fifteen mothers who had stopped breastfeeding for at least fourteen days [17]. They were encouraged to re-initiate breast-feeding by repeatedly suckling their babies at the breast ten to twelve times a day for at least ten to fifteen minutes on either breast. Thirteen of the mothers were the biological mothers and the gap between the last breast feed and the current attempt varied from 15–30 days. Amongst this group, milk appeared after two to seven days, partial breast feeding was established between seven and 30 days and eight mothers achieved exclusive breast feeding between 15–48 days (mean 29.7 days). There were two surrogate mothers who had adopted babies at ages twenty and eighteen days. One of these mothers had not lactated for sixteen years and the other for six years. Milk appeared at the breast of these two mothers between the seventh and eighth day after trying, both achieved partial breast-feeding in 30 days and were exclusively breastfeeding by days 45 and 40 respectively.

A recent study in Papua New Guinea [18] describes 37 non-puerperal adoptive mothers who commenced a relactation programme. Twenty-seven women completed the programme—eleven of whom had never lactated previously. The women were given doses of chlorpromazine and/or metaclopramide four times daily until adequate lactation was established. In addition, those women who had never lactated previously were given a single priming dose of intramuscular medroxyprogesterone 100 mg one week prior to commencing treatment with chlorpromazine and/or metaclopramide. All eleven of the women who had never lactated previously

achieved 'adequate lactation' between five and thirteen days after starting treatment with chlorpromazine and/or metaclopramide. Thirteen of the sixteen mothers who had lactated previously achieved adequate lactation between five and ten days after starting treatment with chlorpromazine or metaclopramide. The success rate for relactation in this programme was extremely high compared to that achieved in the developed world. This could be for a number of reasons—including the use of drug treatment, and the fact that many of the babies being adopted were being breast fed by their natural mothers during the lactation induction programme and so were well used to suckling. It may be that the almost universal acceptance of breast feeding as the normal way to feed a child in Papua New Guinea was an additional factor.

## **6. Discussion**

The studies which have been performed on relactation have a number of important limitations. The reliability of the data is questionable, as it is often both self-reported and retrospective. Little information is available on the incidence of relactation, as in most cases the sample was selected in such a way that only women who had some amount of success were included. The study by Bose et al. [7] is the only one from the developed world which could be used to give any indication of the incidence as the women were recruited before the relactation process had begun, but the numbers in this study were very small. There is little information on the composition of the breast milk produced on relactation (although two studies found a low protein concentration [19,20]). The studies have not properly investigated the effect of different types of maternal dietary supplementation or the use of drugs or hormonal preparations. However, a number of general conclusions can be drawn from the available evidence. Relactation appears to be easier with a younger infant, with incomplete post-partum breast involution, and in women who have lactated previously.

Most women reported finding the relactation process stressful and the presence of a support group of some kind seems to be extremely valuable. The importance of motivation is obvious. This implies that the negative associations which have been observed between bottle supplementation and breastfeeding success [21] may reflect a lack of confidence or motivation on the part of those women who choose to supplement with a bottle, rather than a wholly physiological effect. With adequate breast preparation and determination it is clearly not impossible even for some women who have never had children to produce significant quantities of breast milk. Where the supply of breast milk is too low for complete nutrition, formula supplementation will ensure adequate growth of the infant.

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