

The effect of breast-feeding on fertility. Alan Macfarlane

The way in which this works has been summarized by Wilson. The mechanism linking the two is believed to be a neurally mediated hormonal reflex initiated by the suckling stimulus, whereby increases in the pituitary hormone prolactin act either upon the hypothalamus or directly on the ovaries to prevent ovulation.¹ In other words, suckling acts as an automatic trigger, producing a hormonal reaction. Interestingly, the levels of prolactin **increases** as the level of nutrition of the mother **falls**, hence perhaps acting as an automatic contraception device during periods of hardship. The contraceptive effect is closely connected with a high level of prolactin (prolactinaemia). Modern research has shown that it is above all the level of nutrition which determines the production of prolactin, and that production increases when the level of nutrition falls.² There is evidence that the hormonal effects only last a few hours. If infants are only breast-fed infrequently, the contraceptive effect will be a good deal less than if they are fed on demand, or at least every four or five hours. The duration of postpartum amenorrhoea is related to the nursing pattern; the suckling duration (more minutes per episode), the suckling frequency (more frequent day and night-time feeds) and number of episodes per night are the most important factors for the delay in onset of post-partum menstruation (Jones, 1989).³

It is not known exactly how much protection is given and indeed it probably varies considerably. One study suggests that fertility is reduced by about twenty percent, a second that the reduction is about twenty-five percent.⁴ Historical studies suggest even higher protection. Knodel, for instance, has shown that the interval between births may vary from about twenty-four months with no breastfeeding, to about thirty-nine months with prolonged breastfeeding.⁵ Wilson has compared breast-fed and non breast-fed populations in the early modern period. He notes that 'In non-breast-feeding areas such as Flanders and Bavaria, the non-susceptible period was as short as three or four months and mothers had very high fertility.'⁶ Whereas in areas where there appears to have been breast-feeding, there was a

¹ Wilson, *Proximate*, p.219

²Benedictow, *Milky (xerox)*, 36

³Landers (Ed), *Fertility*, 25

⁴ Myrdal, *Asia*, 2, p.1429; Nag, *Factors Affecting*, p.78-9

⁵ cited in no.112, Wrigley, *Population*, p.347

⁶Quote in Smith, *Demography*, 1684

non-susceptible period of ten to twelve months.⁷ In this case breast-feeding lengthened the interval between child -births by about six months. The fact that this was a good deal less than Knodel's extreme case of fifteen months could be explained by the duration and nature of breast-feeding. In the latter case, the figures suggest breast-feeding of between fourteen to eighteen months.⁸ Benedictow summarizes the research thus. 'Extensive international research has shown that the **lower and upper limits of amenorrhoea related to childbirth as 2 and 18 months respectively**. The average in poor, developing countries is about **10 months**. Two of these 10 months follow automatically after childbirth irrespective of breast feeding.⁹ The range is usually narrower than above. The net contraceptive effect of prolonged breast feeding in an underdeveloped country where people enjoy a poor (suboptimal) level of nutrition is usually 6 to 10 months, which produces a birth interval of about 30 months.¹⁰ The issues are complex. On the one hand, there is some evidence that poor diet has another effect. A poor diet for the mother and absence of supplemental foods for instance produces less milk in the mother and desperation in the infant, which consequently tries to suck harder and more frequently, which may make the contraceptive effect stronger.¹¹ On the other hand, we are told that 'Researchers in Bangladesh and in Guatemala have found a slight negative relation between nutritional status and the duration of postpartum amenorrhoea, although the differences are not usually demographically important.'¹²

The whole matter is affected not only by the nutritional level of the mother, but the manner of infant feeding. Some of the variables are summarized by Menken. There appear to be considerable differences in the effect of type of breastfeeding: whether it is full (no supplementation of breast-milk) or partial, and when supplementation occurs. The relationship is thought to be governed by the enzyme prolactin, the production of which is apparently influenced by the intensity, frequency and duration of suckling.¹³

⁷Wilson, Proximate, 220

⁸Wilson, Proximate, 224; for recent figures for Greystoke in Cumbria in the seventeenth century, see Armstrong, LPS 53 (Autumn 1994). 35-6

⁹Benedictow, Milky (xerox), 32

¹⁰Benedictow, Milky (xerox), 37. Some useful figures are contained in Diggory (ed.), Natural Fertility, 105.

¹¹Diggory(ed.), Natural Fertility, pp.111,147.

¹²Menken, Nutrition(xerox), 435.

¹³Menken, Nutrition (xerox), 434

It is known that long breast-feeding is characteristic of those populations which have been most successful in keeping their populations in balance with their environments, namely hunter-gatherers. 'Another distinctive feature of hunting-gathering life around the world has been the extremely heavy reliance upon lactation to feed infants. Typically hunter-gatherer babies are carried by their mothers next to a naked breast all day and night, and babies take milk very frequently through the day.'¹⁴ The breast-feeding goes on until after the next child is born. We are told that 'Few babies in hunter-gatherer societies are weaned before their mother becomes pregnant again: instead the typical pattern is that the mother feeds her baby until she becomes pregnant again, and then weans the child early in the next pregnancy.'¹⁵ This is not done consciously as a contraceptive device. 'The reasons for the heavy reliance upon lactation to feed infants and young children seems to be based on the scarcity of appropriate "baby foods" in a hunter-gatherer diet.'¹⁶ Yet the unintended consequence is to reduce fecundity.

¹⁴ Howell, in Coleman (ed.) Population Theory, p.178

¹⁵ Howell in Coleman (ed.) Population, p.179

¹⁶ *ibid*, p.179