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## Maternal recall of infant feeding practices after an interval of 14 to 15 years

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**Abstract** Maternal recall of infant feeding practices after 14 to 15 years was compared, in mothers of 144 adolescents from Geelong, Victoria, with data available from infant welfare centre records. The study found a sensitivity of 82% and a specificity of 93% for maternal recall of breastfeeding. Agreement was better for first- and second-born children and for those who had been breastfed for at least a month. Maternal recall of the timing of the introduction of solids and estimation of the duration of breastfeeding was less good (60-70% agreement) and tended to err in the direction of recent trends in infant feeding. These findings have important implications for retrospective studies of the effects of early diet on health in later life. (*Aust J Nutr Diet* 1994;51:25-7).

**Keywords:** infant feeding, maternal recall, breastfeeding, duration of breastfeeding, introduction of solids, birth order.

### Introduction

The data obtained in epidemiological studies often are based on self-reported measures because this approach not only is more practical but also the only possible approach for most historical data. It is therefore important to assess the accuracy of data obtained in this way particularly when obtained after a considerable interval of time. Generally it is assumed that major life events are recalled accurately but in practice a number of factors influence recall of such events. For example, Hoekelman et al. (1) have reported that mothers' memory of their infants' perinatal events, illnesses and development depends on their level of education while others have reported that mothers cannot recall accurately the duration of breastfeeding and the time of introduction of milk formulas (2). Many factors have been reported to affect the accuracy of maternal recall. These include the period of recall (3-6), family size (5), type of information recalled (7) and mothers' educational

level (1,5). In contrast, maternal age and race, and the infant's gender have not been found to influence the reliability of maternal recall (1). The present study compares mothers' recall of infant feeding practices after an interval of 14 to 15 years, with recorded data available from infant welfare centre (IWC) records.

### Methods

The data presented here were obtained as part of a study of the determinants of early risk factors for coronary heart disease in 213 Australian adolescents aged 14 to 15 years. The families participating in this study were recruited by contacting all secondary schools in the Geelong Statistical District (8). In the course of the study the mother of each adolescent completed a questionnaire which included a section with questions on the method initially used to feed the adolescent in infancy (breast or formula), the duration of breastfeeding (to the nearest month) and the age of introduction of solid foods (< 3 months, 3-6 months and > 6 months). The information from this questionnaire was then compared for 144 of the 213 adolescents with IWC data available from a previous study of children born in the second half of 1972 (9,10). The demographic profile of the families of these adolescents was similar to that for the whole

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study group in terms of the proportion of Australian born parents (74% versus 76%), the proportion of mothers with a diploma or degree (10% versus 11%) and father's occupation classified by Daniel score (11). The latter had a mean of 4.4 and a range of 1.8 to 6.6 in both groups. Clinic records which mentioned only formula feeding or stated that the infant had been formula fed from birth were coded as not initially breastfed, whereas those which indicated that the infant had been weaned to a formula, either in hospital or at some later time, were coded as initially breastfed.

## Results

### Initial method of feeding

Recall of the initial method of feeding was in agreement with that recorded in the IWC records for 85% of the mothers. The percentage of agreement for boys and girls was similar (Table 1). Only three of the 144 mothers recalled breastfeeding their infants when the IWC record indicated that they had not done so, while 16 mothers recalled that they had not breastfed when the IWC records indicated that they had in fact done so, even if only for a short period of time. Overall, the sensitivity of asking mothers whether or not they had breastfed was 82% and the specificity 93%. Analysis of the data according to birth order showed better agreement for first- and second-born children (86%) than for later born children (76%).

### Duration of breastfeeding

Of the 86 mothers who recalled initially breastfeeding their infants, nine did not provide information on the duration of breastfeeding (Table 2). The average duration of breastfeeding recalled by the remaining 77 mothers was greater than that recorded in the IWC record, being 6.0 (sd 3.5) months by maternal recall and 4.7 (sd 3.6) months from the records. The difference of 1.3 months was significantly different from zero ( $p < 0.001$ ). Just over one-third of the mothers (37%) recalled the duration of breastfeeding to within one month of the recorded duration of breastfeeding. The correlation between reported and recorded duration of breastfeeding was 0.77.

### Introduction of solid foods

IWC data on the time of introduction of solid foods were available for 109 adolescents for the age categories less than three months, 3–6 months and greater than six months. Table 3 compares maternal recall and recorded data for the age at which solid foods were introduced. Overall, 65% of the maternal recalls fell into the same age category as recorded originally at the IWC. This proportion, however, was significantly higher ( $p < 0.01$ ) for those who had introduced solids between three and six months than for those who had introduced solids before three months (74% versus 45%). No significant differences in agreement were evident with parents' education level or father's occupational status, as measured by the Daniel score (11), for any of the recalled data.

## Discussion

Research workers often rely on maternal recall of perinatal events, illness, and well-care of their babies (1). This retrospective approach is commonly used because of the inher-

ent advantages of a shortened time of study and the relative ease of obtaining the data (12). However, questions about the accuracy of this type of retrospective assessment have been raised because of its effects on the validity of conclusions based on such data (6). In the present study the overall sensitivity and specificity of breastfeeding recall after an interval of 14 to 15 years were 82% and 93% respectively based on the IWC records. However, recall was not a valid measure of the initial method of feeding for mothers who had breastfed their infants for less than a month, since only 65% (13 out of 20) of these mothers recalled breastfeeding their infants after this interval of time.

Whether the IWC records themselves are 'true' is a separate question. Given their serial nature it is unlikely that the method of feeding would be recorded incorrectly on several occasions. There is clearly more scope for error when breastfeeding took place for only a short period of time, but incorrect IWC records are unlikely to be the main reason why 65% of mothers who had breastfed their infants for less than a month recalled that they had not breastfed. This finding is more likely to reflect a view that breastfeeding had not continued sufficiently long for it to be important enough to mention.

The data from the present study also indicated that birth order had an influence on the recall of breastfeeding. This has also been reported for maternal recall of other events in early life (5,13,14).

**Table 1. Comparison of maternal recall of breastfeeding with infant welfare centre (IWC) record.**

	IWC record					
	Boys (n = 67)			Girls (n = 77)		
	BF <sup>(a)</sup>	NBF <sup>(a)</sup>	Total	BF	NBF	Total
<b>Maternal recall</b>						
Breastfed	44	2	46	39	1	40
Not breastfed	9	12	21	9	28	37
Total	53	14	67	48	29	77

(a) BF = initially breastfed; NBF = not breastfed.

**Table 2. Proportion of mothers, able to recall how long they had breastfed their infants (n = 77), for whom the recalled duration of breastfeeding differed by no more than the specified amount from the duration recorded in the IWC<sup>(a)</sup> record.**

Difference (months)	n	%
< 1	29	37
1–1.9	46	59
2–2.9	63	80
3–3.9	68	87
4–7.9	76	99
12	77	100

(a) Infant welfare centre.

**Table 3. Comparison of maternal recall of age when solid foods were introduced with IWC<sup>(a)</sup> record (n = 109).**

	IWC record			Total
	< 3 months	3–6 months	> 6 months	
<b>Maternal recall</b>				
< 3 months	14	15	–	29
3–6 months	17	53	2	72
> 6 months	–	8	–	8
Total	31	76	2	109

(a) Infant welfare centre.

The correlation between reported and recorded duration of breastfeeding in the present study was similar to that reported by Kark et al. (3) after an interval of 20 to 22 years but less than that reported by Vobecky et al. (6) after an interval of eight years. This difference is most likely due to the longer interval in the present study (14 years) since the time interval before recall has an important influence on the accuracy of maternal recall (4,5). The mean difference between the recalled and recorded duration of breastfeeding was also greater in the present study than in the study by Vobecky et al. (6). In both studies the recalled duration of breastfeeding was longer (1.3 and 0.87 months) than that originally recorded. Eaton-Evans and Dugdale, in an earlier Australian study, reported that approximately equal numbers of mothers overestimated and underestimated the duration of breastfeeding, (15) while Goddard et al. (2) reported individual differences of 1–5 weeks after a recall interval of only six months. In the present study, one-third of the mothers recalled the duration of breastfeeding to within one month and 59% to within two months of the recorded duration; both these proportions are much lower than reported by Eaton-Evans and Dugdale after an interval of three years (79% and 95% respectively) (15).

In the present study there was agreement on the time of introduction of solid foods between recall and clinic records for about two-thirds of the mothers. Vobecky et al. (6) reported that the age at introduction of solids was recalled very poorly by mothers with a correlation of only 0.35 for the time of introduction of cereals and 0.16 for meat. On average the recalled age of introduction for cereals was 0.8 months later and for meat 1.5 months later than the recorded age. Quandt (16) also has reported that more mothers recalled too late a date for the introduction of solids and that 25% erred by more than one month. In the present study significantly more mothers who had introduced solids early (< 3 months) reported doing so later, than did mothers who had introduced solids between three and six months.

The absence of any significant association between parents' education level and the accuracy of recall of the duration of breastfeeding is in agreement with both the observations of Eaton-Evans and Dugdale (15) and of Quandt (16) although the latter did find that less well educated mothers tended to 'recall too late a date of solids introduction'.

This is the first Australian report of maternal recall of infant feeding practices after an interval as long as 14 years and the findings indicate that even after such a long interval maternal recall of the initial method of feeding was a valid measure of the information recorded in IWC records for first- and second-born children and for those breastfed for longer than one month. Recall of the duration of breastfeeding and of the timing of the introduction of solids was less good (60–70% agreement). In both instances there was a tendency for maternal recall to err in the direction of recent trends in infant feeding practice. Recognition of these influences on maternal recall is likely to be important particularly in retrospective studies of the effects of early diet on later health.

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