

The effectiveness of public health interventions to promote safe and healthy milk feeding practices in babies

Initiation and Duration of Breastfeeding

Authors Year Country Study Design Quality Dyson 2005 SR 1++ Review Question: To evaluate the effectiveness of interventions to promote the initiation of breastfeeding to women				
Data Sources: <ul style="list-style-type: none"> • Cochrane Pregnancy and Childbirth Group trials register, CENTRAL, MEDLINE, hand searches of 30 journals, weekly current awareness search of a further 37 journals • Other databases including databases for grey literature searched from inception to 2002 October Inclusion Criteria <ul style="list-style-type: none"> • RCTs with or without blinding; no country or language limitation • Pregnant women, mothers of newborn infants and women who may decide to breastfeed in the future. Any population group except women and infants with a specific health problem such as mothers with AIDS, or infants with cleft palate; all those exposed to interventions intended to promote breastfeeding including • Any breastfeeding promotion intervention taking place before the first breastfeed • Primary outcome measure was initiation of breastfeeding 				
Studies (7) RCTs	Main results (include effect size(s)/CIs for each outcome if available) Outcome initiation of breastfeeding		Summary of Results	Applicability to UK settings/ Comments
Health Education + Postnatal support Brent 1995 Intervention Health education Coombs 1998 Hill 1987 Ryser 2004 Serwint 1996 Breastfeeding promotion packs Howard 2000 Early mother infant contact	Sample No n= 108 n=200 n=64 n=54 n=156 Total 582 n= 547	Effect size* RR 2.17, 95% CI, 1.42 – 3.32 RR 1.53 , 95% CI, 1.25 - 1.88 RR 0.93, 95% CI, 0.80 – 1.08	A small single study combining breastfeeding education and postnatal support had a positive effect on increasing breastfeeding initiation rates amongst white, low-income, unmarried, pregnant women with an educational level of 12 years or below. The combined data meta-analysis of the five small studies evaluating the effectiveness of breastfeeding education on increasing breastfeeding initiation rates amongst pregnant women on low incomes found the intervention effective overall. A single study evaluated hospital breastfeeding promotional packs compared to formula company produced materials about infant feeding found this	Health education intervention studies were conducted in the US with low income populations and are applicable to similar populations in UK

Lindenberg 1990		n=259	RR 1.05, 95% CI, 0.94 - 1.17		
	Total	1388		<p>intervention had no effect on increasing initiation rates of breastfeeding amongst women of middle or higher income groups.</p> <p>A single study in Nicaragua (Lindenberg 1990) found immediate contact after birth followed by separation until discharge (the authors do not report why the babies were separated from their mothers) from hospital had no effect on increasing breastfeeding initiation rates among women living in low and middle income groups.</p>	<p>Nicaragua – Unlikely to be applicable to UK populations</p>

<p>Authors Year Country Study Design Quality Fairbank 2000 SR 2++ Review question: To evaluate existing evidence to identify which promotion programmes are effective at increasing the number of women who start to breastfeed</p>							
<p>Data Sources: 15 relevant databases were searched from inception to 1998, 4 journals were hand-searched; references of retrieved papers were examined; experts were contacted to help identify further published and unpublished material. Inclusion criteria:</p> <ul style="list-style-type: none"> • RCTs, non-randomised controlled trials and before-after study designs included • Pregnant women, postpartum women, participants linked to pregnant women and new mothers, women who may breastfeed in the future, people linked with these women • Interventions that promote the uptake of breastfeeding; control groups could receive an alternative breastfeeding promotion programme or standard care <p>Primary outcome was initiation of breastfeeding; secondary outcomes were duration and exclusivity of breastfeeding; intermediate outcomes were included even if they were not associated with primary outcome</p>							
<p>*RCTs, **Non-RCTs, *** Before and After</p>		<p>Main results (include effect size(s)/CIs for each outcome if available) Outcome initiation of breastfeeding</p>			<p>Summary of Results</p>	<p>Applicability to UK settings Comments</p>	
<p>Intervention: Breastfeeding Antenatal Education Group/leaflet Hill 1987* - Pamphlets Kaplowitz&Olson 1983* - Individual & group Kistin 1990* + Fact sheet Loh et al 1997* + Group/leaflet McEnery & Rao 1986* Group/leaflet Ross et al 1983* Group/Video Rossiter 1994* + Paediatrician Individ Serwint et al 1996* ++ Group Wiles 1984* - Agboatwalla & Akram 1997**</p>		<p>Control Breastfeeding N/Total (%)</p>	<p>Breastfeeding N/Total (%)</p>	<p>Difference %</p>	<p>Results</p>	<p>Intervention Small, informal, group education about breastfeeding delivered in the antenatal period can be effective among women from different income or ethnic groups. One-to-one education about breastfeeding in the antenatal period can be effective particularly for women on low incomes Changes in hospital practices to promote breastfeeding can be effective either as part of, or</p>	<p>Review includes developing country studies; wide range of study designs included; when effectiveness compared to later reviews of only high quality RCTs the effectiveness shifts for example in favour of health education</p>
	15/33(46)	19/31(61)	15%	95% CI, 0.822-2.375			
	23	21	18/40				
	13/56 (22%)	11: 17/38 (45%) [12:18/36(50%)]	23-28%	I1 CI, 1.079-2.763 I2 CI, 1.206-3.212			
	30/95 (32%)	43/98 (44%)	12%	p=0.07 95% CI, 0.978 - 1.689			
	16/51 (31%)	7/16 (48%)	13%				
	NO Data	No Data	No Data				
	28/86 (32%)	73/108 (67%)	35%	p<0.0001 CI, 1.440-2.562			
	22/75 (29%)	31/81 (38%)	9%	CI, 0.891-1.629			
	6/20 (30%)	18/20(90%)	60%	P=0.01 % CI, 1.512 - 5.954			
	NO Data	No Data	No Data	No Data			

Video						independent to the Baby Friendly Hospital Initiative. These may include stand alone interventions, including training of health professionals, lactation consultants, rooming in and early contact or a combination of interventions. In most studies, interventions delivered via the WIC program among women of low income, such as, one-to-one antenatal breastfeeding education, training of health professionals, lactation consultants and peer counselling in the ante and postnatal period was effective. Limited evidence available suggests that training health professionals improves breastfeeding knowledge but training is most effective when delivered as part of a package of interventions as
Barwick et al 1997** + Leaflet	19/19 (100%)	18/19 (95%)	5%	95% CI, 0.241-4.155		
Gilmore et al 1979** - Prof training AN education	8/48 (16%)	16/63(25%)	9%			
Kjellmer et al 1978** Individual education	LOWER	HIGHER	UNKNOWN			
Roman 1992** Group education	NO CONTROL	No Data	UNKNOWN			
Vega-Franco et al 1985**	13/25 (52%)	11/25 (44%)	8% *	95% CI, 0.485-1.493		
Verma et al 1995**	NS	NS	NS			
Hart et al 1980***	87/219 (40%)	93/125 (74%)	34%			
Redman et al 1991***	NO Data	No Data	No Data			
Thorley et al 1997***	84/146 (58%)	142/210 (68%)	10%	p<0.07		
General Health Service Rooming-in /early contact						
Lindenberg et al 1990* Breastfeeding programme	101 / 123 (82%)	I1 117/136 I2 108/116	4%-11%	P>0.001		
Lutter et al 1997**	5/206 (2.2%)	154/236 (65.3%)	63.10%	P<0.001 95% CI, 2.779-4.020		
Palti et al 1988**	98/130 (75%)	80/100 (80%)	5%	P=0.004 95% CI, 0.799-1.709		
Winikoff et al 1987*** -	41/148+ 54/132	9/60 (15)+ 34/60 (56)	12% & 16%	CI,0.296-1.051 & CI, 1.011-2.363		
Bradley & Meme 1992***	NO Data	No Data	No Data			
Bruce & Gariffioen 1995***	No Data	No Data	Data unclear	0.39 p=0.007		
Popkin et al 1991***	NO Data	No Data	16%			
Baby Friendly Hospital						
Westphal et al 1995**	NO Data	No Data	No Data			
Buranasin 1991***	85%	99%	14%	p<0.05		
AN/PN BF Education/ Support/Prof Training						
Brent et al 1995* + WIC/Incentives	18/65 (27%)	31/58 (53%)	26%	P=0.002 CI, 1.199-2.507		
Sciaccia et al 1995*	24/34 (70%)	26/34 (76%)	6%	P<0.05 CI,0.654-2.092		
Video/Peer Counselling						
Caulfield et al 1998** ++	15/57 (26%)	I1 32/64 I2 34/55 I3 34/66	24+36+26	P<0.05 I1 CI1.136-2.102, I2CI, 1.401-3.092, I3 CI, 1.164-2.211		

WIC/Peer Support						
Reifsnider & Eckhart 1997**	13/24 (54%)	13/23 (56%)	2%	CI, 0.582-1.896		above.
Carroll 1994***	1063/6224 (17%)	2171/7413 (29%)	12%			Social support from health professionals did not significantly increase breastfeeding initiation rates.
Peer support						
Schafer et al 1998** ++	20/64 (31.0%)	117/143 (82.0%)	51%	CI, 1.682-3.143		
Grummer-Strawn et al 1997***	B 9.2% A 10.7%	A 12.3% A 19.9%	?9.2%			
Long et al 1995***	70%	84%	14%	P=0.07		
Michaels 1993***	50%	67%	17%			
Nadel 1993***	25%	33%	8%	UNCLEAR		Peer support programmes delivered as stand alone intervention to women in low-income groups was effective in increasing breastfeeding initiation rates.
Professional Training						
Bleakney et al 1996***	No Data	No Data		Increase in knowledge p<0.0001		
Brimblecombe et al 1977*** -	228/500 (45.6%)	264/539 (49.0%)	3.40%			
Ellis and Hewat 1983***	NO Data	No Data				
McIntyre et al 1996***	NO Data	No Data		Increase in knowledge mean 73.7% - 88.5% p<0.001		
Stokoe and Clarey 1994***	71.30%	71.90%	0.60%	No Increase		
Support Professionals						
Oakley et al 1990*	89/254 (39%)	105/255 (46%)	7%	CI, 0.955-1.352		Limited evidence available suggest media campaigns as stand-alone intervention, particularly television commercials may improve attitudes and increase breastfeeding initiation rates.
Peer Support						
Kistin et al 1994** -	30/43 (70%)	55/59 ((93%)	23%	P<0.05 CI, 1.085-1.646		
McInnes 1998** ++	94/521 (18%)	105/474 (22%)	4.00%	CI, 0.957-1.575		
Media Campaigns						
Coles et al 1978*** -	81%+ 57%	89%+72%	8%+15%	p<0.001		
Friel et al 1989*** +	NO Data	No Data	No Data	Increased knowledge p<0.05		
Multi-faceted Interventions						
Rodriguez-G et al 1990**	Base(65.9) A 56%	Base(74.9) A 88.8%	33%	Combines 3 intervention results		Several studies found multi-faceted interventions to be effective in increasing breastfeeding initiation rates. These included, peer support programmes and/or media campaigns combined with changes in
Hartley et al 1996***	13/86 (15%)	25/81 (31%)	16%	p<0.05		
Kirk 1980*** +	34 (44%)	137 (68%)	24%	p<0.005		
Lal et al 1992***	69/300 (23.1%)	181/300 (60.2%)	37.10%	p<0.05		
Manitoba Ped Soc 1982***	158/277 (57%)	140/249 (56%)	-1%			
McDivitt et al 1993***	724/800 (90.5%)	755/777 (97.2%)	6.70%	p<0.0001		
Rea 1990***	89.6% (600)	94.2% (736)	4.60%	p<0.05		
Sloper et al 1975***	35/129 (27.1%)	112/306 (39.8%)	12.70%	p<0.001		
Valdes et al 1993***	NO Data	No Data	No Data	No Data		

Vandatle-T et al 1992*** Wright et al 1997*** ++	Data not clear 71.10%	Data not clear 81.10%	10%	P<0.00001	hospital practices or, in fewer studies, combined with breastfeeding education.	
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<p>Tedstone 1998 SR 2- Review Questions:</p> <ul style="list-style-type: none"> To identify the most effective promotional methods to increase the incidence and duration of breastfeeding, to reduce the prevalence of feeding infant formula, especially for young infants; to delay the onset of weaning to no earlier than 4 months; to increase the consumption of iron-rich foods and good sources of vitamin C in infants under one year of age; to increase the variety of weaning foods, especially fruits and vegetables and decrease the consumption of salty, sweet and fatty snack foods in infants under one year of age. 						
<p>Data Sources:</p> <ul style="list-style-type: none"> Systematic searching of electronic databases and hand searching of relevant journals; contacting experts in the field <p>Inclusion Criteria</p> <ul style="list-style-type: none"> Studies with an experimental or quasi-experimental design (RCTs, non-RCTs, prospective cohorts with concurrent controls, studies with a historical cohort or retrospective controlled studies, published between 1984 and 1996 Participants were parents of 0-1 year olds, other family members, healthcare staff, other infant carers Interventions were those that focussed on or included healthy feeding promotion Primary outcomes were initiation or duration of breastfeeding, exclusivity; knowledge and attitudes of healthcare workers; dietary intake, biochemical and anthropometric measurements, food choice and behaviour of parents and carers of weaning infants 						
Included studies RCTs	Main results (include effect size(s)/CIs for each outcome if available)			Summary of Results	Comments/ Applicability to the UK populations and settings	
Interventions to promote breastfeeding Antenatal Education	Control Breastfeeding N/Total%	Intervention Breastfeeding N/Total	Results	The most successful interventions were: <ul style="list-style-type: none"> Long term, spanning the pre and postnatal period. One- to-one antenatal education sessions were more successful in increasing initiation rates than group education sessions and further enhanced by contact with peer counsellors. Group antenatal education was more likely to increase breastfeeding duration rates. 	This is a 1998 review. The majority of studies included here have been included in more recent reviews, where a systematic review process was followed.	
Kistin 1990	n=56	Class n=38 Individual n=36	p<0.05			
	Initiation	22	45			50
	2 weeks	18	32			36
	6 weeks	14	21			22
	12 weeks	4	15			4
Grossman 1990	Data not clear	Data not clear	Data not clear			
Grossman 1988	n=88 17 (Class + Peer C)	n=120 37	n=70 66	p <0.004 p<0.0002		
McEnery 1986	n=34 62	n=35 73	Difference 11%			
Rossiter 1994	n=86 Initiation 38	n=108 70	p<0.001			

	Control Breastfeeding N/Total%	Intervention Breastfeeding N/Total	Results	
Serwint 1996	4 weeks 26	50	p=0.001	<ul style="list-style-type: none"> Intensive involving multiple contacts with a lactation consultant or peer counsellor. <p>Least successful interventions were:</p> <ul style="list-style-type: none"> Postnatal input only Breastfeeding promotion as one of a number of health promotion programmes Additional visits to the hospital/clinic Postnatal support provided by telephone only
	6 months 16	26	p=0.185	
Lactation Consultant Brent 1995	n=75	n=81		
	Initiation 31	42	p=0.26	
	30 days 14	19	p=0.82	
	60 days 9	11	p=0.98	
Auerbach 1985	n=57	n=51		
	Incidence 32	61	p=0.00	
Bruce 1995	2 weeks 18	47	p=0.001	
	n=50	n=50		
		1983	1984	
	8 weeks	46	28	
	8-12 weeks	22	8	
	13-16 weeks	10	12	
Jones 1985	17+ weeks 22	52	p<0.02	
	n=250	n=386		
	2days 77	82	p=0.21	
Lynch 1986	6 weeks 57	64	p=0.15	
	n=355	n=228		
Mother-mother support Jenner 1988	4 weeks 72	84	p<0.05	
	n=135	n=135		
Multi-faceted programme Hartley 1996	No Data	No Data		
	n=19	n=19		
Jenner 1988	Exclusive BF 3 months 4 (21%)	13 (68%)	p<0.01	
	n=90	n=90		
Hartley 1996	Initiation 15	31	p<0.03	
	2 weeks 13	21	p>0.2	

Redman 1995	n=115	n=120					
	During/after						
	6 weeks	82	79				
	4 months						
	Or longer	58	56				
		Control	Intervention				Results
		Breastfeeding	Breastfeeding				
		N/Total%	N/Total				
Sciacca 1995	n=34	n=34					
	Initiation	83	100				
	2 weeks	55	96				p=0.000
	6 weeks	31	81				p=0.023
	3 months	24	61				p=0.01
Grossman 1990	n=48	n=49					
	6 weeks	73	59				p=0.25
	3 months	48	35				p=0.29
	6 months	23	14				p=0.43
Peer Counsellors Kistin 1994	n=43	n=59					
	Initiation	70	93				p<0.05
	6 weeks	28	64				p<0.05
	12 weeks	12	44				p<0.05
Frank 1987			1	2	3	4	
1 routine counselling/ commercial pack			n=83	n=78	n=84	n=79	
	1 month		53	20	6	5	
2 routine counselling/ Research pack			53	28	15	6	
	2 month						
3 research counselling/ Commercial pack			57	29	6	2	
	3 month						
4 research counselling/ Research pack			62	43	20	9	
	4 month						
Professional Education Stokoe 1994	n=353		n=356				
			March		September		
	Initiation	No data	71		72		
	2 weeks	No data	55		58		
Literature Hauck 1994	n=75	n=75					
	No Data	No Data					

Renfrew 2005 SR 2++ Review question: To identify effective interventions that enable women to continue breastfeeding																																																				
Data Sources: A number of relevant databases were searched from 1990 to 2003 for all studies bar those studying healthcare professional training in which case the search included studies from 1980 to 2003. Two journals were hand-searched; references of retrieved papers were examined																																																				
<p>Inclusion criteria:</p> <ul style="list-style-type: none"> RCTs of support, education and multi-faceted interventions; RCTs; non-RCTs and before-after studies for community interventions organisation of care, public policy and healthcare professional training interventions studies Pregnant and postpartum women for support, education, multifaceted and organisation of care interventions; countries experiencing policy change for policy intervention studies and healthcare professionals for healthcare professional support interventions Interventions were support from peers and professionals, breastfeeding education, multi-faceted interventions, community interventions, organisation of care, public policy interventions and healthcare professional training and education interventions <p>Primary outcome was any and exclusive breastfeeding to 6 months; secondary outcomes were breastfeeding beyond six months and participants' views</p>																																																				
*RCTs, **Non-RCTs, ***Before-and-after	Main results (include effect size(s)/CIs for each outcome if available) Outcome duration of breastfeeding	Summary of Results (as reported by the authors of the SR)	Applicability to UK settings Comments																																																	
<p>Intervention: Breastfeeding support</p> <p>Telephone based peer-support: Dennis et al 2002* ++ (Canada)</p> <p>Volunteer counsellor support: Graffy et al 2004* ++ (UK)</p> <p>Volunteer telephone support: Mongeon & Allard 1995* - (Canada)</p> <p>Community postnatal support: Morrell et al 2000* ++ (UK)</p> <p>Individualised professional postnatal support: Porteous et al 2000* ++ (Canada)</p> <p>Postpartum home nursing: Pugh & Milligan 1998* - (US)</p> <p>Postnatal community nurse/peer counsellor: Pugh et al 2002* + (US)</p> <p>Postnatal home visiting for teenagers:</p>	<table border="0"> <tr> <td>Intervention group: Any Breastfeeding N/Total (%)</td> <td>Control group: Any Breastfeeding N/Total (%)</td> <td></td> </tr> <tr> <td>(12 weeks)</td> <td>(12 weeks)</td> <td></td> </tr> <tr> <td>107/132 (81.1)</td> <td>83/124 (66.9)</td> <td></td> </tr> <tr> <td>(4 months)</td> <td>(4 months)</td> <td></td> </tr> <tr> <td>143/310 (46)</td> <td>130/310 (42)</td> <td></td> </tr> <tr> <td>(6 months)</td> <td>(6 months)</td> <td></td> </tr> <tr> <td>24/95 (25)</td> <td>20/99 (20)</td> <td></td> </tr> <tr> <td>(6 months)</td> <td>(6 months)</td> <td></td> </tr> <tr> <td>19/260 (7.3)</td> <td>19/233 (8)</td> <td></td> </tr> <tr> <td>(4 weeks)</td> <td>(4 weeks)</td> <td></td> </tr> <tr> <td>26/26 (100)</td> <td>17/25 (68)</td> <td></td> </tr> <tr> <td>(6 months)</td> <td>(6 months)</td> <td></td> </tr> <tr> <td>No data (50%)</td> <td>No data (27%)</td> <td></td> </tr> <tr> <td>(6 months)</td> <td>(6 months)</td> <td></td> </tr> <tr> <td>3/21 (14)</td> <td>4/20 (20)</td> <td></td> </tr> <tr> <td>(6 months)</td> <td>(6 months)</td> <td></td> </tr> </table>	Intervention group: Any Breastfeeding N/Total (%)	Control group: Any Breastfeeding N/Total (%)		(12 weeks)	(12 weeks)		107/132 (81.1)	83/124 (66.9)		(4 months)	(4 months)		143/310 (46)	130/310 (42)		(6 months)	(6 months)		24/95 (25)	20/99 (20)		(6 months)	(6 months)		19/260 (7.3)	19/233 (8)		(4 weeks)	(4 weeks)		26/26 (100)	17/25 (68)		(6 months)	(6 months)		No data (50%)	No data (27%)		(6 months)	(6 months)		3/21 (14)	4/20 (20)		(6 months)	(6 months)		<p>Results <i>These results provide a brief overview, but cannot be interpreted without information on context</i></p> <p>P=0.01, RR 1.21 (95% CI 1.04, 1.41)</p> <p>NS</p> <p>NS</p> <p>NS</p> <p>Significant - No data reported</p> <p>Results of stats tests not reported</p> <p>Results of stats tests not reported</p>	<p>Breastfeeding support (11 RCTs)</p> <ul style="list-style-type: none"> Breastfeeding support from both peers and professionals is effective at increasing breastfeeding among women who plan to breastfeed so long as it is pro-actively offered to new mothers soon after birth Such support is effective at increasing exclusive breastfeeding among women from relatively advantaged backgrounds, but not among women from disadvantaged backgrounds 	<p>This SR includes public health and clinical interventions – only the public health interventions have been summarised in this table.</p> <p>Review includes developing country studies; wide range of study designs included</p> <p>Quality assessments</p>
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Quinlivan et al 2003* ++ (Australia)	16/65 (25)	16/71 (23)	P=1.00, RR 1.00 (95% CI 0.55,1.82)	<ul style="list-style-type: none"> General postnatal support regardless of infant feeding intention or practice is unlikely to affect breastfeeding duration There is <i>no</i> evidence from this review that professionals who do not have additional training are effective at supporting women to breastfeed 	were not clear for some of the before-and-after studies
Professional home support:	(2 months)	(2 months)			
Serafino-Cross& Donovan* 1992* + (US)	16/26 (61.5)	9/26 (34.6)	P<0.01		
	(6 months)	(6 months)			
	12/26 (48)	No data	No tests of significance reported		
Self-selected female confident support:	(>3 months)	(>3 months)			
Winterburn et al 2003* - (UK)	7/30 (23)	3/42 (7)	NS		
Health professional support:	(6 weeks)	(6 weeks)			
Wrenn 1997** + (US)	8/68 (9)	14/90 (16)	NS		
<u>Intervention: Educational</u>					
Self-help manual:	(3 months)	(3 months)		<p>Breastfeeding education (9 RCTs)</p> <ul style="list-style-type: none"> Written educational material on its own is not effective at increasing duration of breastfeeding Breastfeeding self-assessment tools show potential to increase breastfeeding duration among higher income groups Didactic prenatal breastfeeding education in a paediatric outpatient clinic is ineffective at increasing breastfeeding duration among Black American women on low incomes Group education session on positioning and attachment has been shown to be effective at increasing 	
Coombs et al 1998* - (US)	No data	No data	NS		
Information booklet on bf duration:	(6 months)	(6 months)			
Curro et al 1997* + (Italy)	No data (59.2)	No data (51.2)	NS		
Breastfeeding information booklet:	(52 weeks)	(52 weeks)			
Hauk & Dimmock* 1994 - (Australia)	No data (16)	No data (22)	NS		
Antenatal group education session:	Exclusive bf(6 weeks)	Exclusive bf (6 weeks)			
Duffy et al 1997* + (Australia)	32/35 (92)	10/35 (29)	P<0.001		
Prenatal group education:	(≤12 weeks)	(≤12 weeks)			
Kistin et al 1990* - (US)	6/38 (15)	2/56 (4)	P<0.05		
Simple fact sheet on bf:	(6 weeks)	(6 weeks)			
Loh et al 1997* - (Ireland)	29/38 (76)	17/27 (63)	Results of stats tests not reported		
Self-monitoring intervention:	Mean bf duration	Mean bf duration			
Pollard 1998* ++ (US)	13.75 weeks	12.12 weeks	P=0.2387 (but women who completed I per protocol bf sig longer than C group)		
Culture specific education programme:	(6 months)	(6 months)			
Rossiter 1994* - (Australia)	26/100 (26)	12/75 (16)	NS		
Prenatal visit to paediatrician:	(60 days)	(60 days)			
Serwint et al 1996* ++ (US)	8/74 (11)	6/70 (9)	NS		
<u>Intervention: Multifaceted</u>					
Prenatal education and postnatal support:	(6 months)	(6 months)			
Brent et al 1995* + (US)	No data (14)	No data (7)	NS		
Prenatal education and postnatal support:	Mean bf duration	Mean bf duration			
Campbell 1996** - (US)	42 days	37 days	NS		
Prenatal education/incentive marketing:	Exclusive bf (2 months)	Exclusive bf (2 months)			
Finch & Daniel 2002* - (US)	9/19 (47)	5/29 (17)	Significant – No data		

<p>WIC prenatal teaching and/or non-formula hospital discharge packs:</p> <p>Fredrickson 1995* ++ (US)</p> <p>Postnatal bf counselling and support: Grossman et al 1990** - (US)</p> <p>Antenatal education and postnatal support: Redman et al 1995** ++ (Australia)</p> <p>Bf education and support by nurse for Mothers intending to return to work: Rojjanasrirat 2000* + (US)</p> <p>Antenatal education and postnatal support: Schy et al 1996* - (US)</p> <p>Incentive-based antenatal education and peer support: Sciacca et al 1995* - (US)</p> <p><u>Intervention: Community based</u> No controlled studies were identified that evaluated community based interventions</p> <p><u>Intervention: Organisation of Healthcare provision</u></p> <p>Postnatal ward organisation: bf room Berry 1994* (pilot study) - (UK)</p> <p>Birthing centre vs standard obstetric care: Waldenstrom and Nilsson 1994* + (Sweden)</p> <p>Rooming-in: Watters and Sparrow 1990*** - (Canada) Watters and Kristiansen 1995*** - (Canada)</p> <p>Intensive home visits by health visitors vs generic home visiting</p> <p>Emond et al 2002** ? (UK)</p> <p>Community nurse home visiting vs a hospital nurse clinic visit: Gagnon et al 2002* + (Canada)</p> <p>Additional GP visit 1 week after discharge: Gunn et al 1998* - (Australia)</p>	<p>(24 weeks)</p> <p>3 groups: 14%, 13%, 15%</p> <p>(6 months)</p> <p>7/49 (14)</p> <p>Exclusive bf (4 months)</p> <p>45/77 (58)</p> <p>(16 weeks)</p> <p>Data not clear</p> <p>(4-6 months)</p> <p>No data</p> <p>Exclusive bf (3 months)</p> <p>11/26 (42)</p> <p>(6 weeks)</p> <p>16/20 (80)</p> <p>Exclusive bf (2 months)</p> <p>551/593 (93%)</p> <p>Exclusive bf (6 weeks)</p> <p>215/321 (67)</p> <p>202/312 (66)</p> <p>(6 weeks)</p> <p>No data (61)</p> <p>Exclusive bf (14 days after hospital discharge)</p> <p>183/252 (72.6)</p> <p>(6 months)</p> <p>81/no data</p>	<p>(24 weeks)</p> <p>8%</p> <p>(6 months)</p> <p>10/44 (23)</p> <p>Exclusive bf (4 months)</p> <p>42/75 (56)</p> <p>(16 weeks)</p> <p>Data not clear</p> <p>(4-6 months)</p> <p>No data</p> <p>Exclusive bf (3 months)</p> <p>5/29 (76)</p> <p>(6 weeks)</p> <p>15/20 (75)</p> <p>Exclusive bf (2 months)</p> <p>514/554 (93%)</p> <p>(6 weeks)</p> <p>No data (39)</p> <p>Exclusive bf (14 days after hospital discharge)</p> <p>171/247 (69.2)</p> <p>(6 months)</p> <p>98/no data</p>	<p>NS (but results demonstrate that a plan to breastfeed is critical to effectiveness of teaching intervention)</p> <p>NS</p> <p>P<0.761</p> <p>NS</p> <p>NS reported but no data</p> <p>P<0.05</p> <p>NS</p> <p>NS</p> <p>NS</p> <p>Significant (no data) – but NS when adjusted for confounders (not reported)</p> <p>RR 1.04 (95% CI 0.94, 1.17)</p> <p>NS</p>	<p>exclusive breastfeeding at 6 weeks among women on low incomes</p> <p>Multifaceted interventions (9 RCTs)</p> <ul style="list-style-type: none"> A combination of antenatal education and limited postnatal telephone support is not effective at increasing the duration of breastfeeding among high income women who intend to breastfeed There is indicative evidence that a combination of education and support with incentives may have a positive effect. This is worthy of replication in UK settings among women on low incomes <p>Community based interventions</p> <ul style="list-style-type: none"> There is a need for longitudinal studies that allow assessment of community initiatives, including media campaigns, on attitudes to breastfeeding among all age groups as well as breastfeeding outcomes
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Telephone contact vs home visits by public health nurse: Steel O'Connor et al 2003* + (Canada) Intervention: Public policy	(6 months) 149/332 (45)	(6 months) 146/306 (48)	NS	<p>Organisation of care (5 RCTs, 1 CT, 2 before-after studies)</p> <ul style="list-style-type: none"> There are no high quality studies of rooming-in, shared breastfeeding rooms and mother-infant combined care (although studies on rooming-in are unnecessary and unethical) – and none showed a significant impact on breastfeeding duration. There is insufficient evidence on which to base decisions regarding the types of care examined here. No significant effects on breastfeeding duration were observed in the various post-discharge interventions-including home visiting and early GP appointment after hospital discharge <p>Public policy (3 RCTs, 3 before-after studies)</p> <ul style="list-style-type: none"> National policy of encouraging maternity units to adhere to the UNICEF Baby Friendly Hospital Initiative is likely to extend the
Discharge packs: breast pump vs breast pump and formula vs formula Dungy et al 1997* - (US)	Exclusive bf (mean) Group 1: 6.13 weeks Partial bf (mean) Group 1: 10.03 weeks	Exclusive bf (mean) Group 2: 7.10 weeks Partial bf (mean) Group 2: 10.21 weeks	Exclusive bf (mean) Group 3: 6.43 weeks Partial bf (mean) Group 3: 9.79 weeks	
Discharge packs: formula vs breast pump vs breast pump and formula vs nothing Bliss et al 1997* - (US)	Exclusive bf (6 months) A: 23.9% B: 23.3% Partial bf (6 months) A: 12.7% B: 15.2%	Exclusive bf (6 months) C: 23.3% D: 19.2% Partial bf (6 months) C: 19.3% D: 15.1%	NS	
Pack including bf promotion materials vs pack including formula company materials at 1 st prenatal visit: Howard et al 2000* + (US)	Bf termination at ≤ 2 weeks 15%	Bf termination at ≤ 2 weeks 24%	RR 1.58 (no CI provided)	
Scottish initiative to promote and support bf: Britten and Proudfoot 2002*** (UK)	1995-1999 show a 2.5%	increase in duration at six-	seven weeks postpartum.	
Financial incentive/penalty motivated breastfeeding programme implemented by a regional health authority: Cattaneo et al 2001*** (Italy)	Bf at 16-19 weeks (1998) 38%	Bf at 16-19 weeks (1999) 41%	It is reported that this is sig <P 0.001!	
Adherence to BFI standards in hospitals: Giovannini et al 2003*** (Italy) Intervention: Health professional training	(6 months) 1995 19.4% (17.5-21.3)	(6 months) 1999 46.8 (44.8-48.8)	P<0.000001	
UNICEF training to prepare hospitals for BFHI: Cattaneo and Buzzetti 2001*** (Italy)	(6 months) 1996 206/485 (43) Any bf at hospital discharge (before) 68%	(6 months) 1998 226/366 (62) Any bf at hospital discharge (after) 72%	P<0.05	
Education programme based on UNICEF: Durand et al 2003*** (France)	Exclusive bf at discharge (before) 156/325 (48)	Exclusive bf at discharge (after) 292/325 (90)	NS	
Training for nursery personnel: Gainotti and Pagani 1980*** (Italy)	Any bf at 11 weeks (before)	Any bf at 11 weeks	Significant - No data	
Evidence-based guidance on bf:				

<p>Grant et al 2000*** (UK)</p> <p>'Best Start' bf educational programme: Hartley and O'Connor1996***+ (US)</p> <p>Training midwives in the use of a "hands-off" technique for teaching bf (with coincidental hospital organisational changes): Ingram et al 2002*** + (UK)</p> <p>Education for professionals and public: Manitoba Pediatric Society1982*** (Canada)</p> <p>Bf promotion training to professionals at clinic: Matilla-Mont and Rios-Jimenez 1999*** (Spain)</p> <p>Training for midwives: Stokoe et al 1994*** (UK)</p>	<p>71%</p> <p>Bf at hospital discharge (before) 13/86 (15)</p> <p>Bf at 2 weeks (before) 256/ (13)</p> <p>Any bf at 2 weeks (before) 256/301 (85)</p> <p>Any bf at 6 weeks (before) 201/265 (76)</p> <p>Bf at 6 months (before) Urban: 16% R ural: 22%</p> <p>Exclusive bf at 3 months (before) 30/96 (31.4)</p> <p>Mixed feeding at 3 mos 9/96 (9.4)</p> <p>Exclusive bf at 2 weeks after hospital discharge (before) 55.2%</p>	<p>(after) 73%</p> <p>Bf at hospital discharge (after) 25/81 (31)</p> <p>Bf at 2 weeks (after) 17/81 (21)</p> <p>Any bf at 2 weeks (after) 257/279 (92)</p> <p>Any bf at 6 weeks (after) 218/263 (83)</p> <p>Bf at 6 months (after) Urban: 26% Rural:21%</p> <p>Exclusive bf at 3 months (after) 57/113 (50.4)</p> <p>Mixed feeding at 3 mos 8/113 (7.1)</p> <p>Exclusive bf at 2 weeks after hospital discharge (after) 58.1%</p>	<p>NS</p> <p>P<0.03</p> <p>NS P<0.2</p> <p>P<0.005</p> <p>NS</p> <p>Results of stats tests not reported</p> <p>Results of stats tests not reported</p> <p>Results of stats tests not reported</p> <p>No tests of significance reported</p>	<p>duration of breastfeeding</p> <ul style="list-style-type: none"> Regionally and nationally determined targets with supporting activities and/or penalties and/or incentive may help in extending the duration of breastfeeding Commercial hospital discharge packs that include formula promotion materials are not conducive to exclusive breastfeeding <p>Healthcare professional education (9 before-and-after studies)</p> <ul style="list-style-type: none"> Many of the studies have methodological limitations There appears to be no single way that consistently achieves changes in professional practice that support breastfeeding and that impact positively on bf duration 	
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Does peer support effectively increase the initiation and duration of breastfeeding?

1 st Au, Year, Country, Design, Quality	Study population	Research question Study quality	Intervention	Main results	Applicability to UK populations and settings	Confounders / Comments Funding																																						
Anderson 2005 USA (Hartford, Connecticut) RCT 1-	<p><u>Inclusion criteria: mother</u> ≥ 18 y of age ≤ 32 w gestation at registration to study Absence of gestational diabetes, hypertension, HIV, illegal drug use Considering bf Planned delivery in local hospital Planned to stay in study area for 3 months after delivery Household income < 185% of federal poverty line Available through telephone contact</p> <p><u>Inclusion criteria: baby</u> Gestational age ≥ 36 w BW ≥ 2.5 kg No neonatal complications Apgar scores at 1minute & 5 minutes greater than or equal to 6.</p> <p><u>Randomised</u> I= 90 C= 92</p> <p><u>Participant characteristics (of 135 women who completed the study - baseline characteristics for all women randomised were not reported)</u></p> <table border="1"> <tr> <td></td> <td>I</td> <td>C</td> </tr> <tr> <td>n</td> <td>63</td> <td>72</td> </tr> </table>		I	C	n	63	72	<p><u>Research question</u> To assess the efficacy of peer counselling to promote exclusive bf (EBF) among low-income women</p> <p><u>Study quality</u> Power calculation not reported</p> <p>SPSS was used to randomly assign participants to study groups. The study was not double blinded and the interviewer knew the study hypothesis (no other information is provided by the authors on study</p>	<p><u>Intervention</u> 3 prenatal home visits, daily in-hospital intrapartum visits ,9 postnatal home visits and telephone counselling as needed from a peer counsellor</p> <p>Prenatal visits covered bf education topics benefits and reasons for EBF; avoidance of bottles/dummies; screening for inverted nipples; barriers of EBF; additional fluids and EBF; infant cues; positioning and attachment. A bf video was offered. Family encouraged to participate in the education</p> <p>Postnatally bf support and individualised bf counselling was provided in the woman’s home Peer counsellors were</p>	<p>Coverage by the peer counsellors ranged from 88.9% for the prenatal home visits to 63.5% at 6 weeks postpartum. The ‘average’ duration of home visits was 2.6 ± 1.9 hours, and the ‘average’ duration of hospital visits was 2.2 ± 2.0 hours</p> <p>The authors reported their results using relative risks of ‘non-exclusive’ breastfeeding. Exclusive breastfeeding was defined using “24-hour” recall (For the past 24 hours, did your baby receive any other foods besides breastmilk?), “previous week” recall (Over the past week, how did you feed your baby?), and the “ever given” recall (Did the infant receive any foods other than breastmilk since birth?)</p> <p><u>Bf at hospital discharge, %</u></p> <table border="1"> <tr> <td></td> <td>I</td> <td>C</td> <td>RR (95% CI)</td> </tr> <tr> <td>Not initiating bf</td> <td>9</td> <td>24</td> <td>2.48 (1.04-5.90)</td> </tr> <tr> <td>Non-exclusive bf</td> <td>56</td> <td>41</td> <td>1.35 (0.94-1.93)</td> </tr> </table> <p><u>Prevalence of non-exclusive bf², %</u></p> <table border="1"> <tr> <td>1 m</td> <td>65.1</td> <td>91.7</td> <td>1.41 (1.16-1.71)</td> </tr> <tr> <td>2 m</td> <td>71.4</td> <td>95.8</td> <td>1.34 (1.14-1.58)</td> </tr> <tr> <td>3 m</td> <td>73.0</td> <td>97.2</td> <td>1.33 (1.14-1.56)</td> </tr> </table> <p><u>Not bf at 3 m, %</u></p> <table border="1"> <tr> <td></td> <td>I</td> <td>C</td> <td>RR (95% CI)</td> </tr> <tr> <td></td> <td>63.9</td> <td>50.8</td> <td>1.26 (0.93-1.70)</td> </tr> </table> <p>The authors concluded that this intervention was effective in improving exclusive breastfeeding rates</p>		I	C	RR (95% CI)	Not initiating bf	9	24	2.48 (1.04-5.90)	Non-exclusive bf	56	41	1.35 (0.94-1.93)	1 m	65.1	91.7	1.41 (1.16-1.71)	2 m	71.4	95.8	1.34 (1.14-1.58)	3 m	73.0	97.2	1.33 (1.14-1.56)		I	C	RR (95% CI)		63.9	50.8	1.26 (0.93-1.70)	<p>It is likely that an intervention as intensive as this one may reduce the rates of non-exclusive bf in a low-income population that has good initiation rates</p>	<p>Participants were not strictly similar as baseline (for example more Caucasian women in the control group)</p> <p><u>Funding</u> The study was supported by the Centre for Disease Control and Prevention through a subcontract by the Association of Teachers of Preventive Medicine</p>
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¹ Among multiparous women

² Although not made explicit in the paper, non-EBF is the undesirable outcome, therefore a lower rate is a good thing. EBF rates are not provided in the paper!

1st Au, Year, Country, Design, Quality	Study population	Research question Study quality	Intervention	Main results	Applicability to UK populations and settings	Confounders / Comments Funding
	Maternal age ≤ 30 y,% 77.8 83.4 Married/cohabiting, % 39.7 26.4 Ethnicity Hispanic, % 81 63.9 Black, % 14.3 20.8 Caucasian, % 1.6 12.5 Education high school graduate, % 36.4 30.6 > high school 31.8 31.9 Primiparous, % 55.6 48.6 Previous bf experience ¹ 89.3 78.4 Planned bf duration < 6m 20.4 46.2 6-12 75.5 50.0 > 12 m 4.1 3.8 Employed full time, % 11.1 9.7 part-time, % 23.8 29.2 unemployed, % 65.1 61.1 WIC participation 92.1 88.9 Infant BW, mean, kg 3.39 3.46	quality)	women from the community, with bilingual skills, who had bf experience and received training from a IBCLC based on the WHO 40 hour bf counselling training course + the Hispanic Health Council bf training manual <u>Control group</u> Lactation education and support as per BFHI requirements 24 hour bf helpline Lactation consultant services while in hospital <u>Length of follow-up</u> 3 months <u>Follow-up rate</u> 20 women were ineligible (13 in intervention group and 7 in the control group). Of the remaining women 63 in the intervention group and 72 in the control group completed the study at 3 months.	among low-income, inner city women in the US.		

1 st Au, Year, Country, Design, Quality	Study population	Research question Study quality	Intervention	Main results	Applicability to UK populations and settings	Confounders / comments Funding																
Chapman 2004a Chapman 2004b USA Hartford, Connecticut RCT 1-	<p><u>Inclusion criteria</u> ≥18 years of age Gestation ≤ 26 w Low income (WIC participant, Food Stamp participant, household income <180% of food poverty level) Intention to bf Delivered a healthy term singleton Have access to telephone Residents of the local area Not yet enrolled in the peer counselling programme Absence of congenital abnormalities</p> <p><u>Exclusion criteria</u> History of maternal HIV Admission to SCBU</p> <p><u>Sample size</u> I = 113 C = 106 (of these prenatally randomised women, 54 were not eligible for participation at delivery – 23 in intervention group and 31 in the control group. Reasons for</p>	<p>To evaluate the effectiveness of a breastfeeding peer counselling programme</p> <p><u>Study quality</u> Power calculation not reported</p> <p>The authors state that participants were randomised using the SPSS program. They also reported that all analyses were completed on an ITT basis The study was not double blind, although interviewers were unaware of group</p>	<p><u>Intervention</u> Contacts between peer counsellor and participant included: Prenatally – one home visit to review benefits of bf, screen for inverted nipples, provide written materials, discuss common bf myths, review positioning and attachment and provide anticipatory guidance; optional viewing of bf video;</p> <p>Hospital visits – daily, hands-on assistance, education on infant cues, bf frequency, signs of adequate feeding and management of bf problems;</p> <p>Postpartum visits – 3 home visits, the 1st within 24 hours of hospital discharge, assistance with positioning and attachment, verbal encouragement, free mini-electric breast pumps for those who need, pager access to peer counsellor, further (i.e. > 3) visits on request</p> <p>3 peer counsellors delivered the intervention. Peer counsellor characteristics- completed high school; bf one child up to 6 m; trained in bf management. They worked a total of 2.3 wte</p>	<p><u>Chapman 2004a:</u></p> <p><u>Prenatal peer counsellor contact n= 89</u> ≥ 1 visit, % 53 Duration, mean, min 69.0 ± 57.6 ** Half the participants reporting no prenatal visit had received a telephone call from the counsellor</p> <p><u>Perinatal peer counsellor contact n= 71</u> ≥ 1 hospital visit, % 94 No. of visits, mean 2.7 ± 3.7 Total duration, mean, min 63.8 ± 123.0 **!</p> <p><u>Postpartum contact n= 76</u> ≥ 1 home visit, % 50 ≥ 1 telephone call, % 53 No. of visits, mean (SD) 1.2 ± 1.6 **</p> <p>The authors reported results as negative breastfeeding outcomes:</p> <p><u>Prevalence of (not) Bf</u></p> <table border="1" data-bbox="1108 1037 1568 1181"> <thead> <tr> <th></th> <th>I</th> <th>C</th> <th>RR (95% CI)</th> </tr> </thead> <tbody> <tr> <td>Not initiating bf</td> <td>8.9</td> <td>22.7</td> <td>0.39 (0.18-0.86)</td> </tr> <tr> <td>Not bf at 1 m</td> <td>35.7</td> <td>49.3</td> <td>0.72 (0.50-1.05)</td> </tr> <tr> <td>Not bf at 3 m</td> <td>55.6</td> <td>70.8</td> <td>0.78 (0.61-1.00)</td> </tr> </tbody> </table> <p>At 6 months, the impact of peer counselling on exclusive bf was not apparent – RR 0.94 95% CI 0.79-1.11</p> <p>The authors concluded that peer counsellors can significantly improve breastfeeding initiation rates, and have an impact on breastfeeding duration in this population group.</p>		I	C	RR (95% CI)	Not initiating bf	8.9	22.7	0.39 (0.18-0.86)	Not bf at 1 m	35.7	49.3	0.72 (0.50-1.05)	Not bf at 3 m	55.6	70.8	0.78 (0.61-1.00)	<p>The conclusions apply to a particular group of women (primarily single Puerto Ricans, approximately 25 years of age, with on average, 11 years of education)</p>	<p>**these results are as presented in the paper – but do not seem to make sense</p> <p>Chapman 2004a does not demonstrate effectiveness in bf duration, and Chapman 2004b demonstrates a marginal effect on duration.</p> <p><u>Funding</u> Centres for Disease Control and Prevention and Hartford Hospital Research Foundation</p>
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	<p>ineligibility were provided) Participant characteristics (for 165 women eligible at delivery)</p> <table border="0"> <tr> <td></td> <td>I</td> <td>C</td> </tr> <tr> <td>n</td> <td>90</td> <td>75</td> </tr> <tr> <td>Age, mean, y</td> <td>25.0</td> <td>24.6</td> </tr> <tr> <td>Education, mean, y</td> <td>11.4</td> <td>11.8</td> </tr> <tr> <td>Parity, mean</td> <td>2.0</td> <td>1.9</td> </tr> <tr> <td>Infant BW, mean, kg</td> <td>3.4</td> <td>3.4</td> </tr> <tr> <td>Bf duration intention, m</td> <td>6.3</td> <td>7.0</td> </tr> <tr> <td>Married, %</td> <td>18.0</td> <td>29.3</td> </tr> <tr> <td>WIC participation, %</td> <td>70.0</td> <td>74.7</td> </tr> <tr> <td>Ethnicity Spanish, %</td> <td>80.0</td> <td>80.0</td> </tr> <tr> <td>Ethnicity African-American</td> <td>8.9</td> <td>8.0</td> </tr> <tr> <td>Previous bf experience</td> <td>44.9</td> <td>43.2</td> </tr> <tr> <td>Planned pregnancy, %</td> <td>22.7</td> <td>32.9</td> </tr> </table> <p>More married in C group, $p < 0.09$ More planned</p>		I	C	n	90	75	Age, mean, y	25.0	24.6	Education, mean, y	11.4	11.8	Parity, mean	2.0	1.9	Infant BW, mean, kg	3.4	3.4	Bf duration intention, m	6.3	7.0	Married, %	18.0	29.3	WIC participation, %	70.0	74.7	Ethnicity Spanish, %	80.0	80.0	Ethnicity African-American	8.9	8.0	Previous bf experience	44.9	43.2	Planned pregnancy, %	22.7	32.9	<p>assignment at the beginning of the interview. No other information on quality was reported</p>	<p>Also in the programme were: 1 bilingual programme co-ordinator who was IBCLC qualified (1.0 wte) 2 co-directors one of who serves as a clinical resource for the peer counsellors</p> <p><u>Controls</u> Received routine bf education offered at the hospital: Prenatally individualised bf information; written bf materials; Perinatally hands-on assistance and education from maternity ward nurses in the perinatal period; access to IBCLC Postpartum access to nurse managed helpline</p> <p><u>Follow-up</u> Monthly until bf stopped, maximum to 6 months</p> <p>Loss to follow-up 12% at 6 m</p>	<p><u>Chapman 2004b:</u> <u>This paper reports on the association of degree and timing of exposure to breastfeeding peer counselling services with breastfeeding duration. These results are based on a sample size of 60.</u></p> <p>Length of prenatal visit, mean, minutes = 65</p> <p><u>Content areas reported by participants, %</u></p> <table border="0"> <tr> <td>Positioning</td> <td>96</td> </tr> <tr> <td>Bf brochures reviewed</td> <td>92</td> </tr> <tr> <td>Bf myths</td> <td>92</td> </tr> <tr> <td>Breast pump</td> <td>85</td> </tr> <tr> <td>Bf video viewed</td> <td>54</td> </tr> </table> <p><u>Reasons for lack of prenatal visit, %</u></p> <table border="0"> <tr> <td>Appointment made, no further documentation</td> <td>29</td> </tr> <tr> <td>Participants failed to return phone calls</td> <td>13</td> </tr> <tr> <td>Re-scheduled visits did not occur</td> <td>13</td> </tr> <tr> <td>Refused prenatal visit</td> <td>8</td> </tr> <tr> <td>No documentation of attempted contact from PC</td> <td>8</td> </tr> </table> <p><u>Perinatal visits</u></p> <table border="0"> <tr> <td>Actual contact</td> <td>94%</td> </tr> <tr> <td>No. of visits</td> <td>2.5 ± 4.1</td> </tr> <tr> <td>Total contact with PCs</td> <td>58.9 ± 135.5 minutes **</td> </tr> </table> <p><u>Postnatal home visits, %</u></p> <table border="0"> <tr> <td>Home visit contact, total in 1st m</td> <td>45</td> </tr> <tr> <td>1 visit (1st m)</td> <td>30</td> </tr> <tr> <td>2 visits (1st m)</td> <td>26</td> </tr> <tr> <td>3 visits (1st m)</td> <td>30</td> </tr> <tr> <td>≥ 4 visits (1st m)</td> <td>13</td> </tr> </table>	Positioning	96	Bf brochures reviewed	92	Bf myths	92	Breast pump	85	Bf video viewed	54	Appointment made, no further documentation	29	Participants failed to return phone calls	13	Re-scheduled visits did not occur	13	Refused prenatal visit	8	No documentation of attempted contact from PC	8	Actual contact	94%	No. of visits	2.5 ± 4.1	Total contact with PCs	58.9 ± 135.5 minutes **	Home visit contact, total in 1 st m	45	1 visit (1 st m)	30	2 visits (1 st m)	26	3 visits (1 st m)	30	≥ 4 visits (1 st m)	13		
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Education, mean, y	11.4	11.8																																																																															
Parity, mean	2.0	1.9																																																																															
Infant BW, mean, kg	3.4	3.4																																																																															
Bf duration intention, m	6.3	7.0																																																																															
Married, %	18.0	29.3																																																																															
WIC participation, %	70.0	74.7																																																																															
Ethnicity Spanish, %	80.0	80.0																																																																															
Ethnicity African-American	8.9	8.0																																																																															
Previous bf experience	44.9	43.2																																																																															
Planned pregnancy, %	22.7	32.9																																																																															
Positioning	96																																																																																
Bf brochures reviewed	92																																																																																
Bf myths	92																																																																																
Breast pump	85																																																																																
Bf video viewed	54																																																																																
Appointment made, no further documentation	29																																																																																
Participants failed to return phone calls	13																																																																																
Re-scheduled visits did not occur	13																																																																																
Refused prenatal visit	8																																																																																
No documentation of attempted contact from PC	8																																																																																
Actual contact	94%																																																																																
No. of visits	2.5 ± 4.1																																																																																
Total contact with PCs	58.9 ± 135.5 minutes **																																																																																
Home visit contact, total in 1 st m	45																																																																																
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	pregnancies in C group, $\rho=0.14$			<p>Home visit contact, total in 2nd m 8</p> <p><u>Postnatal telephone contact, %</u></p> <p>Telephone contact, total in 1st m 51</p> <p>1 call (1st m) 35</p> <p>2 calls (1st m) 12</p> <p>3 calls (1st m) 23</p> <p>≥ 4 calls (1st m) 31</p> <p>Telephone contact, total in 2nd m 12</p> <p><u>1st quartile of bf duration, months</u></p> <p>With prenatal contact in 1st m 1.8</p> <p>Without prenatal contact 0.5</p> <p>ρ 0.05</p> <p>With perinatal + postpartum contact 1.8</p> <p>No perinatal ± postnatal contact 0.5</p> <p>ρ 0.05</p> <p>With prenatal + perinatal + postnatal contact 2.1</p> <p>No prenatal ± perinatal ± postnatal contact 0.9</p> <p>ρ 0.08</p> <p>The authors concluded that the coverage levels provided reflect “real world” conditions – and are sufficient to expect differences in breastfeeding rates.</p>		

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Muirhead, 2006 UK (Ayshire, Scotland) RCT 1+	<p><u>Inclusion criteria</u> Women at 28 weeks gestation Registered at specified general practice</p> <p>Total randomised 225 Peer support 112 Controls 113</p> <table border="1"> <thead> <tr> <th></th> <th>I</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>n</td> <td>112</td> <td>113</td> </tr> <tr> <td>Age, mean, y</td> <td>28.5</td> <td>27.8</td> </tr> <tr> <td>Primipara, %</td> <td>53.6</td> <td>53.1</td> </tr> <tr> <td>Previous experience of breastfeeding³, %</td> <td>23.2</td> <td>23.8</td> </tr> <tr> <td>Intending to bf, %</td> <td>50.8</td> <td>52.2</td> </tr> <tr> <td>Intending to ff, %</td> <td>31.2</td> <td>31.8</td> </tr> <tr> <td>Undecided, %</td> <td>17.8</td> <td>15.9</td> </tr> </tbody> </table> <p>The intervention took place in a general practice setting – no specific information is provided on the economic status of the sample</p>		I	C	n	112	113	Age, mean, y	28.5	27.8	Primipara, %	53.6	53.1	Previous experience of breastfeeding ³ , %	23.2	23.8	Intending to bf, %	50.8	52.2	Intending to ff, %	31.2	31.8	Undecided, %	17.8	15.9	<p>To test if a specified programme of additional practical help from trained peer supporters affects the initiation and duration of breastfeeding</p> <p><u>Power calculation</u> 160 women in each group would have 95% power to detect increase from 30 to 50% at 6 weeks</p> <p>Allocation to intervention or control was conducted by post-recruitment concealed</p>	<p><u>Intervention</u> 2 peer supporters were assigned to each mother, each pair supervised by health care professional - plus normal breastfeeding support (community midwife for the first 10 days, health visitor after 10 days, breastfeeding support groups and breastfeeding workshops)</p> <p>Antenatally ≥ 1 visit Hospital – no visit (midwives helped mothers initiate breastfeeding) Postnatally alternate day contacts either on telephone or at home until 28 days <i>first visit not necessarily within the first 72 hours postnatally</i> After 28 days further support only on request until 16 weeks</p> <p>12 peer supporters experienced in bf trained (2 days), refereed, security checked, given identity badge and sweat-shirt with trial logo; paid £ 5.00 per visit to cover costs of travel</p> <p>Peer supporter training involved</p>	<p><u>Women completed questionnaires for breastfeeding in the presence of a health visitor.</u></p> <p><u>Any breastfeeding, %</u></p> <table border="1"> <thead> <tr> <th></th> <th>I</th> <th>C</th> <th>d⁴</th> <th>95% CI</th> </tr> </thead> <tbody> <tr> <td>n</td> <td>112⁵</td> <td>113</td> <td></td> <td></td> </tr> <tr> <td>Initiated</td> <td>54.5</td> <td>53.1</td> <td>1.4</td> <td>-11.7,14.4</td> </tr> <tr> <td>At 10 days</td> <td>41.1</td> <td>40.7</td> <td>0.4</td> <td>-12.5,13.2</td> </tr> <tr> <td>At 6 weeks</td> <td>31.3</td> <td>29.2</td> <td>2.0</td> <td>-10.0,14.0</td> </tr> <tr> <td>At 16 weeks</td> <td>23.2</td> <td>17.7</td> <td>5.5</td> <td>-5.0,16.0</td> </tr> </tbody> </table> <p><u>Exclusive breastfeeding, %</u></p> <table border="1"> <thead> <tr> <th></th> <th>I</th> <th>C</th> <th>d⁴</th> <th>95% CI</th> </tr> </thead> <tbody> <tr> <td>At 6 weeks</td> <td>24.1</td> <td>21.2</td> <td>2.9</td> <td>-8.1,13.8</td> </tr> <tr> <td>At 8 weeks</td> <td>20.5</td> <td>14.2</td> <td>6.4</td> <td>-3.5,16.2</td> </tr> <tr> <td>At 16 weeks</td> <td>1.8</td> <td>0.0</td> <td>1.8</td> <td>-0.7,4.2</td> </tr> </tbody> </table> <p><u>Bf + Solids + NO formula</u></p> <table border="1"> <thead> <tr> <th></th> <th>I</th> <th>C</th> <th>d⁴</th> <th>95% CI</th> </tr> </thead> <tbody> <tr> <td>16 weeks</td> <td>14.3</td> <td>8.0</td> <td>6.3</td> <td>-1.9,14.5</td> </tr> </tbody> </table> <p><u>Reasons for stopping bf</u> Did not want to bf <i>most common reason</i> Difficult baby/premature/special care Family circumstances/no family support Baby started on bottle in hospital Hospital MW told mother not to bf</p> <p><u>Breastfeeding among women who intended to bf</u></p> <table border="1"> <thead> <tr> <th></th> <th>I (95% CI)</th> <th>C (95% CI)</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>n</td> <td>57</td> <td>59</td> <td></td> </tr> <tr> <td>median, days</td> <td>72 (28,116)</td> <td>56 (28,84)</td> <td>ns</td> </tr> </tbody> </table>		I	C	d ⁴	95% CI	n	112 ⁵	113			Initiated	54.5	53.1	1.4	-11.7,14.4	At 10 days	41.1	40.7	0.4	-12.5,13.2	At 6 weeks	31.3	29.2	2.0	-10.0,14.0	At 16 weeks	23.2	17.7	5.5	-5.0,16.0		I	C	d ⁴	95% CI	At 6 weeks	24.1	21.2	2.9	-8.1,13.8	At 8 weeks	20.5	14.2	6.4	-3.5,16.2	At 16 weeks	1.8	0.0	1.8	-0.7,4.2		I	C	d ⁴	95% CI	16 weeks	14.3	8.0	6.3	-1.9,14.5		I (95% CI)	C (95% CI)	p	n	57	59		median, days	72 (28,116)	56 (28,84)	ns	<p>Setting Scotland, applicable UK-wide</p> <p>Two points worth noting – there may be differences in areas where breastfeeding initiation is higher than in this setting (50%) and there may be some impact of availability of voluntary support locally</p>	<p>This was a well conducted study, however, the sample size did not reach target, this reduced the power of the study to detect a difference of 20% bf at 6 weeks between groups</p> <p>We do not know how peer supporters were received by local MW and HV</p> <p><u>Funding</u> Departments of Ayshire and Arran Health Board</p>
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³ Not including primiparas

⁴ Difference

⁵ 13 of the randomised women did not have peer support; analysis includes all 112 randomised

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		allocation (generated by computer in blocks of 10) for each of four strata (primigravidae, previously breastfed >6 weeks, previously breastfed <6 weeks). Allocation of each woman was done by telephone call. The authors analysed the data by ITT	breastfeeding education, transferable skills, health & safety, confidentiality, patient-professional relationships Specific details on what the peer supporters discussed with the mothers was not reported <u>Controls</u> Normal midwife support for initiating breastfeeding in hospital plus normal bf support from community midwife in 1 st 10 days and health visitor after, breastfeeding support groups, breastfeeding workshops <u>Length of follow-up</u> 16 weeks <u>Follow-up rate</u> 97%	<u>Breastfeeding among women who initiated bf</u> n 61 60 median, days 72 (6,138) 56 (22,90) ns <u>Breastfeeding duration among primigravidae</u> n 60 60 median, days 7 (0,23) 3 (0,13) ns The authors concluded that peer supporters in this population did not increase breastfeeding in this population by a statistically significant amount.		

Does a lactation consultant effectively increase the initiation and duration of breastfeeding?

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Bonuck 2005 USA (New York) RCT 1++	<p><u>Inclusion criteria</u> English or Spanish speaking Twin or singleton pregnancy Intention to keep infant Intention to continue care with the centre and hospital system to 12 mo Pregnancy < 24 weeks ≥ 2 contact telephone numbers (the reason for this is not explicitly stated in the paper)</p> <p><u>Exclusion criteria</u> HIV positive status Chronic illness with medications incompatible with bf Pre-gestational diabetes mellitus Women with breast reduction surgery, hepatitis B/C, T cell leukaemia</p> <p><u>Sample size</u> I group=188 C group=194</p> <p><u>Participant characteristics (for all women randomised)</u></p> <table border="1" data-bbox="315 1134 768 1289"> <thead> <tr> <th></th> <th>I</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>n</td> <td>188</td> <td>145</td> </tr> <tr> <td>Age in y, mean[SD]</td> <td>25.68[6.38]</td> <td>24.84[5.86]</td> </tr> <tr> <td>High school yes, %</td> <td>58.5</td> <td>63.4</td> </tr> <tr> <td>Married/partner, %</td> <td>50.3</td> <td>54.6</td> </tr> </tbody> </table>		I	C	n	188	145	Age in y, mean[SD]	25.68[6.38]	24.84[5.86]	High school yes, %	58.5	63.4	Married/partner, %	50.3	54.6	<p><u>Research question</u> To determine if an individualised prenatal and postnatal lactation consultant intervention resulted in increased cumulative intensity of breastfeeding up to 52 weeks</p> <p><u>Power calculation</u> 52 women per group were needed at each centre to detect a difference of 29% breastfeeding initiation rate as a result of the</p>	<p><u>Intervention</u> Lactation consultants (LCs) from out of the hospital system delivered the intervention</p> <p>Two prenatal visits: Visit 1: to build trust, assess feeding intentions, discuss benefits of bf, bf education using flip-charts; Visit 2: to teach practical BF initiation skills using models;</p> <p>Prenatally weekly telephone contact</p> <p>Hospital visit / postnatal home visits to enhance bf skills – latching on, positioning, avoiding common bf problems; use of pump; other bf related information such as frequency of feeding, determining adequate intake in the infant; maternal nutrition;</p>	<p>_A total of 304 women (intervention =145, control=159) were included in the final analysis</p> <p>Breastfeeding was measured through maternal self-report. Breastfeeding status was assessed with the Index of Breastfeeding Status (7-level ordinal scale). Breastfeeding intensity was created by summing weekly scores (range from 1 to 7, with 1 being exclusive breastfeeding and 7 being exclusive formula feeding)</p> <p>The intervention group was significantly more likely to breastfeed at each week up to and including week 20, with the exception of week 18.: <u>Any bf rates, %</u></p> <table border="1" data-bbox="1216 954 1648 1102"> <thead> <tr> <th></th> <th>I</th> <th>C</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>2 weeks</td> <td>90.0</td> <td>65.0</td> <td><0.03</td> </tr> <tr> <td>6 weeks</td> <td>75.0</td> <td>55.0</td> <td><0.03</td> </tr> <tr> <td>20 weeks</td> <td>53.0</td> <td>39.3</td> <td><0.03</td> </tr> <tr> <td>12 months</td> <td>18.0</td> <td>15.0</td> <td>ns</td> </tr> </tbody> </table> <p><u>≥ 50% bf rates, %</u></p> <table border="1" data-bbox="1216 1161 1648 1230"> <tbody> <tr> <td>1st week</td> <td>69.0</td> <td>47.0</td> <td><.001</td> </tr> <tr> <td>1st 9 weeks</td> <td>45.8</td> <td>33.1</td> <td><0.03</td> </tr> </tbody> </table> <p><u>Exclusive bf, unadjusted, %</u></p> <table border="1" data-bbox="1216 1305 1648 1388"> <tbody> <tr> <td>2 w</td> <td>20.0</td> <td>19.0</td> <td>ns</td> </tr> <tr> <td>6 w</td> <td>15.0</td> <td>16.0</td> <td>ns</td> </tr> <tr> <td>13 w</td> <td>9.0</td> <td>11.0</td> <td>ns</td> </tr> </tbody> </table>		I	C	p	2 weeks	90.0	65.0	<0.03	6 weeks	75.0	55.0	<0.03	20 weeks	53.0	39.3	<0.03	12 months	18.0	15.0	ns	1 st week	69.0	47.0	<.001	1 st 9 weeks	45.8	33.1	<0.03	2 w	20.0	19.0	ns	6 w	15.0	16.0	ns	13 w	9.0	11.0	ns	<p>LC comprehensive input (skills building, education, problem solving, support) both prenatal and postnatal can increase the rate of any breastfeeding, but not of exclusive breastfeeding in a low-income sample of women.</p> <p>Likely that this intervention will work in UK groups where bf rates are low</p> <p>Cost was \$ 266 in 2003 (calculation as if LC was a health centre employee).</p>	<p>Effect significantly modified by country of origin in regression analysis: US born control subjects had significantly greater risk of low breastfeeding at 13 weeks in the entire sample compared with foreign-born women in the intervention group (OR 5.22; 95% CI 2.43-21.36)</p> <p>Recall bias for method of feeding may have led to misclassification or over-reporting</p> <p>Funding US Department</p>
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⁶ Higher values indicate greater intensity of formula feeding, lower values indicate greater intensity of bf. Range of weekly intensity for 13 weeks was 13-91.

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	<p>Foreign born yes, % 44.1 34.5 Ethnicity black, % 35.6 38.7 Ethnicity Spanish, % 54.8 55.2 Medicaid yes, % 53.7 58.2 Other children yes, % 59.9 62.0 Bf before yes, % 67.9 67.8 Intention only bf, % 33.0 32.4 Intention mixed, % 47.3 50.3 Intention ff, % 8.5 7.6 Intention don't know, % 11.2 9.7</p> <p>The authors state that there were no significant differences between the women randomised, but not included in the final analysis compared with those women included in the final analysis, within or across treatment groups</p>	<p>intervention with an α of 0.05 and β of 0.20 (2 tailed test)</p> <p>Women were randomised using an undisclosed blocking factor and stratification according to centre. A biostatistical office generated and maintained a list of random codes. Concealment was maintained by sealed envelope. No blinding</p>	<p>expression/storage; nursing in public; return to work/school; establishing social support in family, school, workplace, healthcare providers.</p> <p>Nursing bra offered to all women, breast pump offered in some circumstances</p> <p>LCs maintained diaries</p> <p><u>Control group</u> Women had no contact with LCs Received standard care – 1 mandatory prenatal care class. WIC women had the opportunity to visit the WIC breastfeeding co-ordinator</p> <p>Follow-up until 12 months</p> <p>follow-up rate: 79.5% (and 83.5% of eligible women after exclusions)</p>	<p>26 w 5.0 8.0 ns 52 w 6.0 5.0 ns</p> <p><u>Bf intensity at 13 week, median score⁶</u> n=145</p> <p>Any prenatal visits 61.0 2 prenatal visits 60.0 Any postnatal visit 54.5 Hospital visits 58.5 Home visits 49.0 Telephone calls 53.0 Any prenatal/ postnatal 60.0 Both prenatal and postnatal 58.5</p> <p>The authors concluded that this intervention was effective in increasing breastfeeding duration and intensity.</p>		<p>of Agriculture, Maternal and Child health Bureau Agency for Healthcare Quality and Research</p>

Does a healthcare service professional effectively increase the initiation and duration of breastfeeding?

1 st Au, Year, Country, Design, Quality	Study population	Research question Study quality	Intervention	Main results	Applicability to UK populations and settings	Confounders / Comments Funding																																																															
Di Napoli 2004 Italy (Rome) RCT 1- Study was conducted in 2000-2001	<p><u>Inclusion criteria</u> Pregnant women intending to bf</p> <p><u>Exclusion criteria</u> Not available by telephone contact Inability to speak Italian Did not reside in catchment area of hospital Women suffering from tuberculosis, psychosis, active Hep A/B, Hep C or HIV +ve Baby SCBU admission</p> <p><u>Sample size</u> I group=303 C group=302</p> <p><u>Participant characteristics</u></p> <table border="1"> <thead> <tr> <th></th> <th>I</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>n</td> <td>303</td> <td>302</td> </tr> <tr> <td>Age ≤ 35 y, %</td> <td>79.5</td> <td>81.5</td> </tr> <tr> <td>Primipara, %</td> <td>45.2</td> <td>43.4</td> </tr> <tr> <td>Education high school, %</td> <td>60.1</td> <td>61.9</td> </tr> <tr> <td>Unemployed, %</td> <td>40.9</td> <td>46.4</td> </tr> <tr> <td>Pre-pregnancy smoking, %</td> <td>27.4</td> <td>25.2</td> </tr> <tr> <td>BF experience⁷, %</td> <td>66.3</td> <td>67.3</td> </tr> </tbody> </table> <p>Knowledge of bf techniques⁸, poor, %</p>		I	C	n	303	302	Age ≤ 35 y, %	79.5	81.5	Primipara, %	45.2	43.4	Education high school, %	60.1	61.9	Unemployed, %	40.9	46.4	Pre-pregnancy smoking, %	27.4	25.2	BF experience ⁷ , %	66.3	67.3	<p><u>Research question</u> To assess the effectiveness of a bf support intervention delivered by midwives to increase bf initiation and duration</p> <p>Objectives were to reduce premature discontinuation of exclusive bf by 50% and 25% increase in number of women bf by the end of the 3rd month</p> <p><u>Power calculation</u></p>	<p><u>Intervention</u> Home visit of 30 minutes within 7 days of discharge + bf counselling by telephone</p> <p>Delivered by midwives from maternity ward who had attended the UNICEF 18-hour intensive training course on bf techniques and management. Same midwife for each woman</p> <p><u>Control group</u> The authors stated "no specific</p>	<p>Infant's feeding habits were assessed by 24-hour recall. An interviewer administered a questionnaire once every 2 weeks over 6 months (=12 questionnaires). WHO definitions of breastfeeding were used</p> <p><u>ANALYSIS BY INTENTION TO TREAT (I=276; C=266)</u></p> <table border="1"> <thead> <tr> <th></th> <th>I</th> <th>C</th> </tr> </thead> <tbody> <tr> <td colspan="3"><u>Risk of discontinuing bf at 4 m¹⁰</u></td> </tr> <tr> <td>HR</td> <td>1.01</td> <td>1.0</td> </tr> <tr> <td>95% CI</td> <td>0.82-1.27</td> <td>-</td> </tr> <tr> <td colspan="3"><u>Risk of discontinuing bf at 6 m</u></td> </tr> <tr> <td>HR</td> <td>1.04</td> <td>1.0</td> </tr> <tr> <td>95% CI</td> <td>0.85-1.26</td> <td>-</td> </tr> </tbody> </table> <p><u>ANALYSIS BY ADHERANCE TO PROTOCOL</u></p> <table border="1"> <thead> <tr> <th colspan="3"><u>Risk of discontinuing bf at 4 m in women who received intervention</u></th> </tr> </thead> <tbody> <tr> <td>HR</td> <td>0.92</td> <td>1.0</td> </tr> <tr> <td>95% CI</td> <td>0.74-1.13</td> <td>-</td> </tr> <tr> <td colspan="3"><u>Risk of discontinuing bf at 6 m in women who received intervention</u></td> </tr> <tr> <td>HR</td> <td>0.96</td> <td>1.0</td> </tr> <tr> <td>95% CI</td> <td>0.78-1.18</td> <td>-</td> </tr> </tbody> </table> <p>- Differences in bf duration at 4 and 6 m by ITT analysis and by Adherence to Protocol analysis were not significant</p>		I	C	<u>Risk of discontinuing bf at 4 m¹⁰</u>			HR	1.01	1.0	95% CI	0.82-1.27	-	<u>Risk of discontinuing bf at 6 m</u>			HR	1.04	1.0	95% CI	0.85-1.26	-	<u>Risk of discontinuing bf at 4 m in women who received intervention</u>			HR	0.92	1.0	95% CI	0.74-1.13	-	<u>Risk of discontinuing bf at 6 m in women who received intervention</u>			HR	0.96	1.0	95% CI	0.78-1.18	-	<p>Likely applicable to UK populations and settings</p>	<p>Low response rate</p> <p><u>Funding</u> Not reported</p>
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		Study quality				Funding
	71.9 75.2 Knowledge of bf techniques good, % 28.1 24.8 Vaginal delivery 68.6 62.6 Caesarean section 31.4 37.4 First bf < 2 h after birth 5.6 7.6 In hospital ebf (p 0.01) 41.3 52.3 In hospital ff ⁹ 49.5 43.4	A sample size of 500 women was required to detect a 25% reduction in discontinuation of bf at 3 m, with a 80% power and 95% significance in observed differences Participants were stratified by age and parity – and randomly assigned (details on randomisation method, and concealment of allocation not reported)	intervention” Follow-up To 6 m Follow-up rate, Complete follow-up 45.9% (those who completed 12 interviews) Partial follow-up 43.6% (those who completed less than 12 interviews)	- A 50% increase in risk of complementary and/or formula feeding was noted among those women who refused the midwife’s home visit; bf duration was shorter than those in the intervention group who received the home visit (p <0.01) - A 50% increase in bf discontinuation was observed when complementary feeds were provided in hospital The authors concluded that this early home support programme delivered by midwives was not effective in increasing breastfeeding initiation and duration,		

⁸ Obtained by adding answers (1 point if correct) to following questions with 3 possible answers each- 1) definition of bf on demand, 2) sufficient quantity of breast milk, 3) daily frequency of feedings, 4) method of increasing bm production, and 5) method of avoiding nipple pain. Poor knowledge = score between 0 and 3; good knowledge either score 4 or 5.

⁹ Complementary feeding, or exclusive formula feeding

¹⁰ Intervention group adjusted for age, mother/father education level, smoking habits before/during pregnancy, parity, participation in bf course, knowledge of bf techniques, mother’s health status, pre-pregnancy BMI, type of delivery/infant feeding in hospital

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Labarere 2005 France (Chambery) RCT 1++ (Oct 2001-May 2002)	<p><u>Inclusion criteria</u> Mothers who had delivered a healthy singleton baby Breastfeeding on discharge</p> <p><u>Exclusion criteria</u> Baby admitted to SCBU Mother admitted to ICU Age ≤ 18 years Residence outside catchment area of designated hospital Inability to speak French Unable to complete study due to known psychosocial problems such as homelessness</p> <p><u>Sample size</u> I group 116 C group 115 (Mother infant-pairs were recruited in Chambery Teaching Hospital)</p> <p><u>Participant characteristics (women)</u></p> <table border="1" data-bbox="293 1085 763 1404"> <thead> <tr> <th></th> <th>I</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>n</td> <td>116</td> <td>115</td> </tr> <tr> <td>Age, y, mean (SD)</td> <td>29.3 (4.1)</td> <td>29.7 (4.8)</td> </tr> <tr> <td>> high school education, %</td> <td>75.0</td> <td>73.0</td> </tr> <tr> <td>White collar worker, %</td> <td>79.3</td> <td>75.6</td> </tr> <tr> <td>Living with spouse, %</td> <td>98.3</td> <td>97.4</td> </tr> <tr> <td>Prenatal class attendance, %</td> <td>72.4</td> <td>76.5</td> </tr> <tr> <td>Primiparity, %</td> <td>50.0</td> <td>54.8</td> </tr> <tr> <td>Epidural anaesthesia, %</td> <td>59.5</td> <td>63.5</td> </tr> <tr> <td>Caesarean section, %</td> <td>8.6</td> <td>8.7</td> </tr> </tbody> </table>		I	C	n	116	115	Age, y, mean (SD)	29.3 (4.1)	29.7 (4.8)	> high school education, %	75.0	73.0	White collar worker, %	79.3	75.6	Living with spouse, %	98.3	97.4	Prenatal class attendance, %	72.4	76.5	Primiparity, %	50.0	54.8	Epidural anaesthesia, %	59.5	63.5	Caesarean section, %	8.6	8.7	<p>To determine whether attending an early, routine, preventive, outpatient visit delivered in a primary care physician's office would improve breastfeeding outcomes</p> <p>Power calculation: A sample of 115 women in each arm had 85 % power at α error of <0.05 to detect a rise in exclusive breastfeeding at 4 weeks from 70% to 87.5%, taking into account ~ 5 % loss to follow-up</p> <p><u>Allocation sequence was generated using random</u></p>	<p>Intervention: women were invited to attend a routine, individual , preventive, out-patient visit in the office of a primary care physician within 2 weeks after the birth</p> <p>Primary care physicians (family doctors and paediatricians) practicing in the catchment area of the hospital – all received a 5 hour training on breastfeeding related knowledge and counselling. Content of training – general health assessment, lactation physiology, feeding position and latch-on assessment, management of common lactation problems, management of infant problems, maternal medication use and sources of</p>	<p>Breastfeeding status was determined using 24-hour recall.</p> <table border="1" data-bbox="1193 478 1767 1149"> <thead> <tr> <th>n</th> <th>I</th> <th>C</th> <th>OR (95% CI)</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>Exclusive bf 4 wk, %</td> <td>83.9</td> <td>71.9</td> <td>1.17 (1.01-1.34)</td> <td>0.03</td> </tr> <tr> <td>Any bf At 4 wk, %</td> <td>89.3</td> <td>81.6</td> <td>1.09 (0.98-1.34)</td> <td>0.10</td> </tr> <tr> <td>Duration of any bf, wk, median</td> <td>18</td> <td>13</td> <td>1.40 (1.03-1.92)</td> <td>0.03</td> </tr> <tr> <td>Reporting any bf difficulty, %</td> <td>55.3</td> <td>72.8</td> <td>0.76(0.62-0.93)</td> <td><0.01</td> </tr> <tr> <td>Very/fairly satisfied with bf experience, %</td> <td>91.1</td> <td>87.7</td> <td>1.04(0.95-1.14)</td> <td>0.41</td> </tr> </tbody> </table> <p>The authors concluded that in this setting, the study provides preliminary evidence of the effectiveness of breastfeeding support provided by trained physicians on breastfeeding outcomes – and that a short training programme for physicians might contribute to improving breastfeeding outcomes.</p>	n	I	C	OR (95% CI)	p	Exclusive bf 4 wk, %	83.9	71.9	1.17 (1.01-1.34)	0.03	Any bf At 4 wk, %	89.3	81.6	1.09 (0.98-1.34)	0.10	Duration of any bf, wk, median	18	13	1.40 (1.03-1.92)	0.03	Reporting any bf difficulty, %	55.3	72.8	0.76(0.62-0.93)	<0.01	Very/fairly satisfied with bf experience, %	91.1	87.7	1.04(0.95-1.14)	0.41	<p>Marked difference in LOS after normal vaginal delivery, rates of caesarean section, routine breastfeeding support between France and UK</p> <p>This sample was a fairly affluent educated group of women; people in difficult psychosocial circumstances were not included; non-French speaking women not included</p>	<p>Participating physicians were self-selected to the group therefore were highly motivated; Postal questionnaires may not all have returned correct bf information; bf status may have varied during the intervening 4 weeks; this was a low risk population group</p> <p><u>Funding</u> Grants from Union Professionnelle des Médecins Libéraux de la Région Rhone Alpes (Lyon, France), and grants from Délégation Régionale a la Recherche Clinique, Centre Hospitalier Universitaire</p>
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Does breastfeeding education effectively increase the initiation and duration of breastfeeding?

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Forster 2004 Australia (Melbourne) RCT 1+	<p><u>Inclusion criteria</u> Booking for AN care as public patient Primigravida 16-24 weeks pregnant Fluency in English</p> <p><u>Exclusion criteria</u> Physical problems preventing breastfeeding Choosing a birth centre/private obstetric care</p> <p><u>Sample size</u> Recruited (when women attended midtrimester scan) 984 P/ Skills group (PS) 327 Attitudes group (A) 329 Standard care group 328</p> <p><u>Participant characteristics</u> Mean age at recruitment, y</p> <table border="1"> <tr> <td>Std</td> <td>A</td> <td>A</td> </tr> <tr> <td>28.7</td> <td>28.0</td> <td>28.2</td> </tr> <tr> <td>Completed sec. School (%)</td> <td>78.7</td> <td>71.1</td> </tr> <tr> <td></td> <td>75.5</td> <td></td> </tr> <tr> <td>Lives with partner (%)</td> <td>90.5</td> <td>86.8</td> </tr> <tr> <td></td> <td>86.8</td> <td></td> </tr> </table>	Std	A	A	28.7	28.0	28.2	Completed sec. School (%)	78.7	71.1		75.5		Lives with partner (%)	90.5	86.8		86.8		<p>To determine the influence of mid-pregnancy breastfeeding education on the proportions of women breastfeeding at hospital discharge; and breastfeeding duration</p> <p><u>Power calculation</u> Sample size required to increase breastfeeding rates among primiparous women at discharge from 75% to 85% with 95 % CI and 80% power + 20% loss to follow-up was 324 in each group; this sample</p>	<p>Practical skills group - single session class of 1.5 hours with women (not their partners) focussing on practical breastfeeding skills like latching-on, using teaching aids</p> <p>Attitudes group – 2 class sessions of 1 hour each with women (and their partners) to change attitudes towards breastfeeding and making a breastfeeding plan</p> <p>Standard care group - received standard care (any or all of the following - formal breastfeeding education, breastfeeding</p>	<p><u>Breastfeeding intention</u> Planned to breastfeed 92.5%</p> <p>Of the above - Planned to breastfeed for 6 months or longer 26% Planned to breastfeed for 3 months or less 7% No plans about duration of breastfeeding 45.8%</p> <p><u>Breastfeeding at 2/4 days postpartum</u></p> <table border="1"> <thead> <tr> <th>n=</th> <th>P/Skills</th> <th>Attitudes</th> <th>Std care</th> <th>OR (CI)</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>306</td> <td>306</td> <td>308</td> <td>310 (these figures exclude babies who were not yet feeding)</td> <td></td> <td></td> </tr> <tr> <td>Breastmilk only(%)</td> <td>77.8</td> <td>77.6</td> <td>78.1</td> <td>P/S 0.98(0.67,1.44) A/S 0.97(0.66, 1.42)</td> <td>0.93 0.89</td> </tr> <tr> <td>Any breastmilk</td> <td>96.7</td> <td>94.5</td> <td>95.8</td> <td>P/S 1.30(0.56,3.0) A/S 0.75(0.36,1.57)</td> <td>0.55 0.45</td> </tr> </tbody> </table> <p><u>Breastfeeding at 6 months</u></p> <table border="1"> <thead> <tr> <th>n =</th> <th>P/Skills</th> <th>Attitudes</th> <th>Std care</th> <th>OR (CI)</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>297</td> <td>297</td> <td>293</td> <td>299</td> <td></td> <td></td> </tr> <tr> <td>Exclusive breastfeeding</td> <td>8.8</td> <td>8.5</td> <td>7.4</td> <td>P/S 1.20(0.67,2.18) A/S 1.17 (0.66, 2.13)</td> <td>0.53 0.60</td> </tr> <tr> <td>Any breastfeeding</td> <td>54.5</td> <td>49.8</td> <td>54.2</td> <td>P/S 1.01(0.74,1.40) Adjusted for income p 0.20 A/S 0.84(0.61,1.16)</td> <td>0.99 0.29</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Adjusted for income p 0.88</td> <td></td> </tr> </tbody> </table> <p>No statistically significant between-group differences in median values for any breastfeeding</p>	n=	P/Skills	Attitudes	Std care	OR (CI)	p	306	306	308	310 (these figures exclude babies who were not yet feeding)			Breastmilk only(%)	77.8	77.6	78.1	P/S 0.98(0.67,1.44) A/S 0.97(0.66, 1.42)	0.93 0.89	Any breastmilk	96.7	94.5	95.8	P/S 1.30(0.56,3.0) A/S 0.75(0.36,1.57)	0.55 0.45	n =	P/Skills	Attitudes	Std care	OR (CI)	p	297	297	293	299			Exclusive breastfeeding	8.8	8.5	7.4	P/S 1.20(0.67,2.18) A/S 1.17 (0.66, 2.13)	0.53 0.60	Any breastfeeding	54.5	49.8	54.2	P/S 1.01(0.74,1.40) Adjusted for income p 0.20 A/S 0.84(0.61,1.16)	0.99 0.29					Adjusted for income p 0.88		<p>These interventions may be more effective in UK settings where initiation rates are much lower; in addition there is a need to change societal attitudes and improve bf skills</p>	<p>The local hospital was Baby Friendly 3 years before the study, and already supportive of breastfeeding; these same interventions may have been more effective in a less supportive environment</p> <p>Breastfeeding intention is an indicator of initiation and duration- many participants did not intend to breastfeed for 6 months- therefore results are not surprising</p> <p><u>Funding</u> Grant from the</p>
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Exclusive breastfeeding	8.8	8.5	7.4	P/S 1.20(0.67,2.18) A/S 1.17 (0.66, 2.13)	0.53 0.60																																																																									
Any breastfeeding	54.5	49.8	54.2	P/S 1.01(0.74,1.40) Adjusted for income p 0.20 A/S 0.84(0.61,1.16)	0.99 0.29																																																																									
				Adjusted for income p 0.88																																																																										

¹¹ Likert scale 1= strongly disagree; 5= strongly agree

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	<p>Women were on low incomes and from culturally diverse backgrounds</p>	<p>wise was sufficient to increase breastfeeding at 6 months from 38% to 52% in either intervention group compared to the standard care group</p> <p><u>The authors state that a computerised system of biased urn randomisation was accessed by telephone to ascertain women's group allocation; analysis was by ITT</u></p>	<p>information, lactation consultant support, peer support, education on breastfeeding on postnatal ward, 24-hour telephone counselling, postnatal home visit from community midwife)</p> <p>Midwife+ community educator with specific training in childbirth education (Note: lactation consultant qualifications not required) delivered both interventions in a classroom setting of not more than 8 participants</p> <p>Follow-up: 6 months Follow-up rate: Practical skills=297, Attitudes=293 and controls=299</p>	<p>Attendance at intervention classes – less than anticipated; but same as women booking in to childbirth education classes at local women's hospital</p> <p><u>Class evaluations median scores¹¹</u></p> <table border="1" data-bbox="1014 507 1451 938"> <thead> <tr> <th></th> <th>Skills</th> <th>Attitudes</th> </tr> </thead> <tbody> <tr> <td>Class was enjoyable</td> <td>4</td> <td>4</td> </tr> <tr> <td>Infant feeding information useful</td> <td>5</td> <td>4</td> </tr> <tr> <td>Did not learn new things</td> <td>1</td> <td>1</td> </tr> <tr> <td>Enough opportunities to ask Q's</td> <td>5</td> <td>5</td> </tr> <tr> <td>Class leader able to answer Q's</td> <td>5</td> <td>5</td> </tr> <tr> <td>Felt uncomfortable participating in classes</td> <td>1</td> <td>1</td> </tr> <tr> <td>Time/place convenient</td> <td>4</td> <td>4</td> </tr> <tr> <td>Would recommend to other women</td> <td>5</td> <td>5</td> </tr> </tbody> </table> <p>The authors concluded that, in settings where breastfeeding initiation is already high, neither study intervention could be recommended as an effective strategy to increase breastfeeding initiation or duration.</p>		Skills	Attitudes	Class was enjoyable	4	4	Infant feeding information useful	5	4	Did not learn new things	1	1	Enough opportunities to ask Q's	5	5	Class leader able to answer Q's	5	5	Felt uncomfortable participating in classes	1	1	Time/place convenient	4	4	Would recommend to other women	5	5		<p>National Health and Medical research Council, Canberra plus funding from The Royal Women's Hospital and The Victorian Health Promotion Foundation, Melbourne, Australia</p>
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Labarere 2003 France (Annecy) RCT 1++ (Oct to Dec 2001)	<p><u>Inclusion criteria</u> ≥ 18 y of age Ability to speak French Employed outside home pre-natally Delivered a singleton baby before 37 w, > 2500 g BW Bf in hospital</p> <p><u>Exclusion criteria</u> Mother transferred to ICU Baby transferred to SCBU Neonatal death</p> <p>In-hospital breastfeeding mothers were recruited</p> <p><u>Randomised</u> I= 106 C= 104</p> <p><u>Participant characteristics (of women who were analysed)</u></p> <table border="1" data-bbox="293 1117 757 1458"> <thead> <tr> <th></th> <th>I</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>n</td> <td>93</td> <td>97</td> </tr> <tr> <td>Age, mean, y</td> <td>30.5</td> <td>30.9</td> </tr> <tr> <td>Any University education, %</td> <td>57.0</td> <td>60.8</td> </tr> <tr> <td>White collar worker, %</td> <td>88.2</td> <td>81.4</td> </tr> <tr> <td>Worked full time prenatal, %</td> <td>67.7</td> <td>70.8</td> </tr> <tr> <td>Primipara, %</td> <td>52.7</td> <td>52.6</td> </tr> <tr> <td>Smoked during pregnancy, %</td> <td>18.3</td> <td>15.5</td> </tr> <tr> <td>Caesarean section, %</td> <td>4.3</td> <td>11.3</td> </tr> <tr> <td>Gestation at birth, mean, w</td> <td>39.9</td> <td>40.1</td> </tr> </tbody> </table>		I	C	n	93	97	Age, mean, y	30.5	30.9	Any University education, %	57.0	60.8	White collar worker, %	88.2	81.4	Worked full time prenatal, %	67.7	70.8	Primipara, %	52.7	52.6	Smoked during pregnancy, %	18.3	15.5	Caesarean section, %	4.3	11.3	Gestation at birth, mean, w	39.9	40.1	<p>To determine if a single one-to-one hospital education session could increase the rate of bf at 17 w</p> <p><u>Power calculation</u> 103 mother-baby pairs were required in each arm to detect a rise in bf rates at 17 weeks from 30% to 50%, assuming a power of 80% and a significance of 0.05 with a 2 sided chi squared test</p> <p>Randomisation was performed using computer-generated random numbers in blocks of 8; allocation concealment by numbered, sealed, opaque envelopes; the authors state that ITT analysis was performed, but the results do not appear to reflect this</p>	<p><u>Intervention</u> Education intervention - single 30 minute one-to-one session of providing information + discussion + leaflet with all information to combine bf and employment - given at discharge</p> <p>Topics included bf legislation and its interpretation for working mothers; positioning and attachment; feeding on demand; management of common bf problems; opportunities for prolonging bf after return to work</p> <p>Delivered by 3 mw and 1 intern (given a handbook to ensure standardisation of intervention)</p>	<p>Breastfeeding status was determined by 24-hour recall</p> <table border="1" data-bbox="1238 446 1792 1458"> <thead> <tr> <th></th> <th>I</th> <th>C</th> <th>p OR (95%CI)</th> </tr> </thead> <tbody> <tr> <td>n</td> <td>93</td> <td>97</td> <td></td> </tr> <tr> <td>Returned to work within 17 weeks after delivery, %</td> <td>35.5</td> <td>27.8</td> <td>0.49</td> </tr> <tr> <td>Contacted peer support groups</td> <td>21.5</td> <td>25.8</td> <td>0.26 -</td> </tr> <tr> <td>Delay in returning to work, mean, w</td> <td>12.9</td> <td>12.3</td> <td>0.51 -</td> </tr> <tr> <td><u>Bf outcomes</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bf on return to work, %</td> <td>6.4</td> <td>10.3</td> <td>- -</td> </tr> <tr> <td>Any bf at 17 w, %</td> <td>34.4</td> <td>40.2</td> <td>- 0.86 (0.52-1.40)</td> </tr> <tr> <td>Exclusive bf at 17 w, %</td> <td>14.0</td> <td>14.4</td> <td>- 0.97 (0.42-2.22)</td> </tr> <tr> <td>Bf difficulties</td> <td>44.1</td> <td>52.6</td> <td>- 0.84(0.54-1.29)</td> </tr> <tr> <td>Very or fairly satisfied with bf experience</td> <td>90.3</td> <td>90.7</td> <td>- 0.99 (0.73-1.36)</td> </tr> </tbody> </table> <p>Mothers in the intervention group less likely to report</p>		I	C	p OR (95%CI)	n	93	97		Returned to work within 17 weeks after delivery, %	35.5	27.8	0.49	Contacted peer support groups	21.5	25.8	0.26 -	Delay in returning to work, mean, w	12.9	12.3	0.51 -	<u>Bf outcomes</u>				Bf on return to work, %	6.4	10.3	- -	Any bf at 17 w, %	34.4	40.2	- 0.86 (0.52-1.40)	Exclusive bf at 17 w, %	14.0	14.4	- 0.97 (0.42-2.22)	Bf difficulties	44.1	52.6	- 0.84(0.54-1.29)	Very or fairly satisfied with bf experience	90.3	90.7	- 0.99 (0.73-1.36)	<p>A large proportion of women in this trial were over 25 years of age, well-educated and white collar workers. The results may not be applicable to other population groups</p>	<p>Caesarean section rate higher in control group</p> <p>Educational interventions may not be appropriate in the face of other socio-cultural factors – also we do not know what bf provisions there were for mothers who returned to work</p> <p><u>Funding</u> Not stated</p>
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Lavender 2005 UK (Liverpool) 1+	<p><u>Inclusion criteria</u> Registration with general practice in one of the 8 electoral wards Fetal abnormality not detected at the 20 week ultrasound Expressed desire to breastfeed</p> <p><u>Exclusion criteria</u> Fetal abnormality</p> <p><u>Sample size (cluster randomised)</u> Randomised 1312 Intervention group 679 Control group 633</p> <p><u>Participant characteristics</u></p> <table border="1" data-bbox="293 909 736 1450"> <thead> <tr> <th></th> <th>I</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>n =</td> <td>679</td> <td>633</td> </tr> <tr> <td>Age, mean, y</td> <td>29.6</td> <td>29.7</td> </tr> <tr> <td>Primipara, %</td> <td>49.7</td> <td>53.0</td> </tr> <tr> <td>Ethnicity white, %</td> <td>93.1</td> <td>91.1</td> </tr> <tr> <td>Smokers, %</td> <td>14.0</td> <td>13.0</td> </tr> <tr> <td>Gestational age, mean, w</td> <td>20.8</td> <td>20.7</td> </tr> <tr> <td>Deprivation score, mean</td> <td>20.8</td> <td>19.4</td> </tr> <tr> <td>Kept diary, %</td> <td>24.1</td> <td>21.8</td> </tr> </tbody> </table> <p><u>Intention to bf, %</u></p> <table border="1" data-bbox="293 1308 736 1450"> <thead> <tr> <th></th> <th>I</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>< 1 week</td> <td>0.14</td> <td>0.15</td> </tr> <tr> <td>>1 w - < 1 m</td> <td>2.4</td> <td>5.2</td> </tr> <tr> <td>1 m – 6 w</td> <td>14.3</td> <td>11.8</td> </tr> <tr> <td>>6 w – 4 m</td> <td>37.4</td> <td>34.1</td> </tr> </tbody> </table>		I	C	n =	679	633	Age, mean, y	29.6	29.7	Primipara, %	49.7	53.0	Ethnicity white, %	93.1	91.1	Smokers, %	14.0	13.0	Gestational age, mean, w	20.8	20.7	Deprivation score, mean	20.8	19.4	Kept diary, %	24.1	21.8		I	C	< 1 week	0.14	0.15	>1 w - < 1 m	2.4	5.2	1 m – 6 w	14.3	11.8	>6 w – 4 m	37.4	34.1	<p>To evaluate the effect of an antenatal breastfeeding education intervention on individual expectation of breastfeeding duration</p> <p><u>Power calculation</u> 1040 women were required for a study power of 90% at the 5% two sided significance level, assuming an intra-cluster correlation coefficient of 0.01 and mean cluster size is 142</p> <p>Note – women, PCHTs and wards were at the 1st, 2nd and 3rd levels respectively to be treated as</p>	<p><u>Intervention</u> In addition to standard antenatal care, women in intervention group were invited to attend a single educational support afternoon session supervised by a lactation consultant but also attended by a local community midwife.</p> <p>Community midwives attended a separate training workshop prior to the session (the teaching programme was based on baby friendly guidelines)</p> <p><u>Control group</u> received standard antenatal care, breastfeeding advice from attending midwives and information about hospital parent education classes</p> <p><u>Follow up</u> Feedback was assessed through an initial questionnaire on breastfeeding. Follow up questionnaires were</p>	<p><u>A woman was considered to be breastfeeding if she gave her baby any amount of breast milk.</u></p> <p><u>Achieved expected duration of breastfeeding</u></p> <table border="1" data-bbox="1216 510 1789 670"> <tbody> <tr> <td>I</td> <td>44.4%</td> </tr> <tr> <td>C</td> <td>41.7%</td> </tr> <tr> <td>OR</td> <td>1.2</td> </tr> <tr> <td>(95% CI)</td> <td>0.9-1.6</td> </tr> <tr> <td>p</td> <td>0.2</td> </tr> </tbody> </table> <p><u>Breastfeeding at discharge</u></p> <table border="1" data-bbox="1216 766 1789 925"> <tbody> <tr> <td>I</td> <td>80.3%</td> </tr> <tr> <td>C</td> <td>76.5%</td> </tr> <tr> <td>OR</td> <td>1.2</td> </tr> <tr> <td>95% CI</td> <td>0.8-1.7</td> </tr> <tr> <td>p</td> <td>0.3</td> </tr> </tbody> </table> <p><u>Frequency of exclusive bf at 4 m</u> Prevalence data of exclusive bf by group not reported</p> <table border="1" data-bbox="1216 1005 1789 1165"> <tbody> <tr> <td>Exclusive bf</td> <td>18.8%</td> </tr> <tr> <td>OR</td> <td>1.1</td> </tr> <tr> <td>95% CI</td> <td>0.6-1.8</td> </tr> <tr> <td>p</td> <td>0.8</td> </tr> </tbody> </table> <p><u>Reasons for stopping bf</u> Return to work 20.3% Lack of breastmilk 15.3%</p> <p>No differences in study arms for reasons for stopping</p> <p>The authors reported that women who did not reach their expected duration of bf compared to those who did,</p>	I	44.4%	C	41.7%	OR	1.2	(95% CI)	0.9-1.6	p	0.2	I	80.3%	C	76.5%	OR	1.2	95% CI	0.8-1.7	p	0.3	Exclusive bf	18.8%	OR	1.1	95% CI	0.6-1.8	p	0.8	<p>This was a UK study</p>	<p>Intervention was not designed to counter peer and societal pressure</p> <p><u>Funding</u> Regional and development fund grant from the northwest regional R&D directorate</p>
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Wolfberg 2004 USA (Baltimore) RCT 1- (Mar 2001-Aug 2002)	<p><u>Inclusion criteria</u> Women seeking prenatal care in the resident and faculty practices at Johns Hopkins Hospital</p> <p>Nothing further and no exclusion criteria stated</p> <p>The authors stated that they contacted 567 expectant mothers during their first and second trimester – but they also state that they conducted a RCT with 59 fathers</p> <p><u>Participant characteristics (women)</u></p> <table border="1"> <thead> <tr> <th></th> <th>I</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>n</td> <td>27</td> <td>32</td> </tr> <tr> <td>Ethnicity black, %</td> <td>85</td> <td>84</td> </tr> <tr> <td>< high school education</td> <td>30</td> <td>25</td> </tr> <tr> <td>In receipt of public assistance, %</td> <td>22</td> <td>16</td> </tr> <tr> <td>WIC participant, %</td> <td>78</td> <td>81</td> </tr> <tr> <td>Employed, %</td> <td>59</td> <td>63</td> </tr> <tr> <td>Living with father of baby, %</td> <td>59</td> <td>59</td> </tr> </tbody> </table>		I	C	n	27	32	Ethnicity black, %	85	84	< high school education	30	25	In receipt of public assistance, %	22	16	WIC participant, %	78	81	Employed, %	59	63	Living with father of baby, %	59	59	<p>To test the effectiveness of an educational intervention designed to encourage fathers to advocate for bf and to support his partner if she chooses to bf</p> <p><u>Power calculation</u> A sample size of 230 women was sufficient to detect a 50% increase in bf duration with a power of 0.8 at a significance level of 0.5, assuming an attrition rate of 25%. The authors noted that it became clear that the attrition rate was going to be substantially higher</p> <p>No information was reported on method of randomisation, allocation concealment etc.</p>	<p><u>Intervention</u> Informal, interactive non-didactic 2-hour bf class (every 2 weeks) for expectant fathers where men were encouraged to talk about their beliefs, concerns and values about bf including misconceptions about interference with relationships; cosmetic impact on a woman's breast; then to experiment with the message of the class which was that 'men can be advocates for their partner and the health of their new baby by facilitating their partners decision to bf; men were encouraged to support each other in their commitment as advocates</p> <p>Class facilitator was a father himself, black, knowledgeable but not overbearing, easy-going and engaging</p> <p>Classes were held for groups of 4-12 men at a time</p> <p>Teaching methods included video, slides, role play</p> <p>Fathers who completed the class received a stipend of \$ 25.00; Mothers also received \$ 25.00 if and when they completed the last telephone survey</p> <p><u>Controls</u> The control class was similar in every aspect except for the content which as baby care and safety – car seat use, fire</p>	<p>567 expectant mothers contacted, only 59 completed the study</p> <p><u>Reasons for attrition, %</u></p> <table border="1"> <tbody> <tr> <td>Mother Refusal to participate</td> <td>24</td> </tr> <tr> <td>Father refused to participate</td> <td>11</td> </tr> <tr> <td>Failure to attend class</td> <td>9</td> </tr> <tr> <td>Loss to follow-up</td> <td>36</td> </tr> <tr> <td>No involvement between mother & father</td> <td>8</td> </tr> </tbody> </table> <p>Differences in those who stayed and did not stay on in the study not significant bar receipt of welfare funds – less women in the study on welfare, more women in the study employed</p> <p><u>Breastfeeding outcomes, n/N(%)</u></p> <table border="1"> <thead> <tr> <th></th> <th>I</th> <th>C</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>Bf initiation, %</td> <td>20/27 (74)</td> <td>13/32 (41)</td> <td></td> </tr> <tr> <td>0.02</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bf at 4 weeks, %</td> <td>10/26 (38)</td> <td>11/31 (35)</td> <td></td> </tr> <tr> <td>0.51</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bf at 6 weeks, %</td> <td>9/26 (35)</td> <td>6/31 (19)</td> <td></td> </tr> <tr> <td>0.13</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bf at 8 weeks, %</td> <td>9/26 (35)</td> <td>6/31 (19)</td> <td>0.13</td> </tr> </tbody> </table> <p><u>Associations between maternal/paternal characteristics and bf initiation</u></p> <p>Mother had bf experience, n/N (%)</p> <table border="1"> <tbody> <tr> <td></td> <td>5/6 (83)</td> <td>4/6 (67)</td> </tr> <tr> <td>0.42</td> <td></td> <td></td> </tr> <tr> <td>Mother was bf in infancy, n/N (%)</td> <td>¾ (75)</td> <td>4/5 (80)</td> </tr> <tr> <td>0.14</td> <td></td> <td></td> </tr> </tbody> </table>	Mother Refusal to participate	24	Father refused to participate	11	Failure to attend class	9	Loss to follow-up	36	No involvement between mother & father	8		I	C	p	Bf initiation, %	20/27 (74)	13/32 (41)		0.02				Bf at 4 weeks, %	10/26 (38)	11/31 (35)		0.51				Bf at 6 weeks, %	9/26 (35)	6/31 (19)		0.13				Bf at 8 weeks, %	9/26 (35)	6/31 (19)	0.13		5/6 (83)	4/6 (67)	0.42			Mother was bf in infancy, n/N (%)	¾ (75)	4/5 (80)	0.14			<p>Could be implemented in the UK</p>	<p>It was not clear how many women were recruited & randomised in this study and how many losses there really were</p> <p>Attrition rate was high</p> <p><u>Funding Study supported by a training grant from the Centres for Disease Control and Prevention</u></p>
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	<p><u>Participant characteristics (fathers)</u></p> <p>Ethnicity black, % 85 80</p> <p>< high school education, % 22 27</p> <p>Employed, % 85 70</p>		<p>safety, lead exposure prevention, sleeping positions, bath safety. There was no bf content</p> <p><u>Follow-up</u> To 8 weeks after childbirth</p> <p><u>Follow-up rate</u> Unclear how many were randomised; numbers given but only for those who completed the study</p>	<p>Mother planned to bf for 1st month 11/11 (100) 12/20 (60)</p> <p>0.004</p> <p>Mother lives with father, n/N (%) 13/15 (87) 9/19 (47)</p> <p>0.24</p> <p>Mothers mother in favour of baby being bf, % 5/5 (100) 5/7 (71)</p> <p>0.03</p> <p>Mother believes partner in favour of bf baby, n/N (%) 13/14 (93) 8/13 (62)</p> <p>0.002</p> <p>The authors concluded that expectant fathers can be influential advocates for breastfeeding, playing a critical role in encouraging a woman to breastfeed her newborn infant.</p>		

What interventions effectively reduce the risks of contamination of equipment used in bottle-feeding?

First author, Year, Country, Study design, Quality	Review methodology	Research question	Studies included in the review	Main results	Applicability to UK populations and settings	Confounders/ Comments
Bernath 2001 Australia SR Search appears well conducted	<u>Inclusion/exclusion criteria</u> 1. Participants included mothers and infants 2. Case series, and non-clinical studies were excluded 3. Non-English studies were excluded Medline (1966-June 2000), CINHALL (1982-July 2001), Current Contents (1993-2001), Premedline (2001), Australasian Medical Index (2001) and the Cochrane Library were searched	To compare the effectiveness of sterilisation with disinfection of shared feeding equipment on rates of cross infection in mothers and infants.		No studies were identified in the literature search that compared the effects of sterilisation and disinfection of shared feeding equipment on rates of cross infection		Funding – none explicitly stated

First author, Year, Country, Study design, Quality	Review methodology	Research question	Studies included in the review	Main results	Applicability to UK populations and settings	Confounders / Comments
McLoughlin (forthcoming) UK SR 2-	<p><u>Inclusion/exclusion criteria</u></p> <p>1. Studies had to be carried out in developed countries</p> <p>2. Any study design was included</p> <p>3. Studies had to examine methods of cleaning and/or sterilisation of infant feeding equipment</p> <p>Medline, Embase, CINHALL, Psychinfo, British Nursing Index, Allied and Complementary Medicine, Premedline, Health Management Information Consortium, EBM reviews, SIGLE and the Cochrane Library database were searched (2006). Hand searches were also conducted and relevant published and unpublished studies were sought by contacting key professionals and companies</p> <p>Quality was not systematically reported</p>	To identify the evidence base for ways of reducing infections from the use of infant feeding equipment in the home	<p>Eight studies were included in the review:</p> <p>Hargrove 1974 (US non-RCT)</p> <p>Hughes 1987 (US non-RCT)</p> <p>Jacob 1985 (UK observational)</p> <p>Vaughan 1962 (US observational)</p> <p>Gatherer 1978 (UK observational)</p> <p>Anderson and Gatherer 1970 (UK observational)</p> <p>Clegg 1977 (UK observational)</p> <p>Rowan and Atkinson 1997 (UK observational)</p> <p>Participants included mothers and babies from a wide range of socio-economic backgrounds</p>	<p>The majority of the studies were reported to be of poor quality (no other details provided)</p> <p>Hargrove et al 1974: No differences in frequency of illness occurred in babies fed using bottles/teats washed in hot soapy water and rinsed with hot running water compared with infants fed using sterilised bottles (not defined).</p> <p>Hughes et al 1987: No significant differences in incidence of gastroenteritis were observed between children whose mothers were taught the 'terminal' method of formula preparation (not defined) compared with children whose mothers were taught the 'clean' method of formula preparation (not defined)</p> <p>Jacob 1985: Of 28 mothers interviewed, 46.6% were sterilising correctly and 53.3% were not. 81% of the mother who were not sterilising correctly were from social class 4 and 5. The majority of mothers not sterilising correctly were multiparous (P<0.02).</p> <p>Vaughan et al 1962: 20% (n=45) of samples from homes designated as sanitary showed heavy growth of organisms compared to 36% (n=26) of home designated as unsanitary.</p> <p>Gatherer 1978: In this study, the bottles of mothers who were using a cold chemical (hypochlorite solution) were sampled. The bacteriological results demonstrated satisfactory results in 91% (n=86) of bottles and 75% (n=71) of teats. When hypochlorite solution was compared with a crystals product, not differences were observed; on bacteriological assessment, both methods of sterilisation gave satisfactory results.</p> <p>Anderson and Gatherer 1970: This bacteriological assessment demonstrated that 78% (n=281) of bottles and 70% (n=253) teats sterilised by hypochlorite had ≤5 colonies compared to 46% (n=106) of bottles and 34% (n=77) teats sterilised by the boiling method. More mothers using the hypochlorite method used a more thorough cleansing routine.</p>	Relevant	<p>Sufficient information was provided in the studies to recommend thorough washing of equipment with hot water and soap, and handwashing before sterilisation</p> <p>Funding – none stated</p>

First author, Year, Country, Study design, Quality	Review methodology	Research question	Studies included in the review	Main results	Applicability to UK populations and settings	Confounders / Comments
				<p>Clegg et al 1977: In a bacteriological assessment, 98.1% of bottles and 90.6% of teats has a residual count of less than 5/ml (mothers were provided with a commercial sample of a stabilised solution of 1% sodium hypochlorite) (Details of this study are not clear)</p> <p>Rowan and Atkinson 1997: In this study bottles were contaminated with different levels of enterotoxigenic <i>Bacillus cereus</i> that has been cleaned using different methods: Steam sterilisation: bottles were automatically steamed at 100°C for 15 min. Microwave bottle steam sterilisation: bottles were placed in a sterilising unit and steamed at 100°C in a microwave oven for 9 min Chemical method sterilisation: bottles were immersed in sodium hypochlorite solution for 90 min. All methods of disinfection successfully reduced <i>B cereus</i> to a non-detectable level when the initial level of contamination was $\leq 10^5$ CFU ml⁻¹. <i>B cereus</i> emerged earlier (after 14h) in uncleaned bottles that had been subjected to the chemical disinfection method. Both thermal disinfection methods did not totally eliminate <i>B. cereus</i> after 18 h. The level of contamination and the degree of bottle cleaning affected the length of time that the levels of <i>B Cereus</i> remained at undetectable levels ($P < 0.05$). The chemical method failed to disinfect uncleaned feeding bottles contaminated with 10^5 organisms ml⁻¹. Potentially hazardous levels were detected after 14h storage following thermal disinfection. Both steam disinfection methods were equally efficient at removing <i>B. cereus</i> from bottles contaminated with $\leq 10^5$ CFU ml⁻¹ ($P < 0.05$) and both methods were significantly better than the chemical method ($P < 0.05$).</p> <p>The authors concluded that there is a lack of good quality information on effective ways of cleaning and sterilising infant feeding equipment in the home.</p>		

What interventions effectively reduce the risks of contamination of equipment used in the storage and reheating of breast milk?

No studies were identified that addressed this question.

What interventions effectively reduce the risks associated with the reconstitution of formula?

First author, Year, Country, Study design, Quality	Review methodology	Research question	Studies included in the review	Main results	Applicability to UK populations and settings	Confounders/ Comments
Renfrew 2003 UK SR 2+	<p><u>Inclusion/exclusion criteria</u></p> <ol style="list-style-type: none"> 1. Studies had to be carried out in developed countries 2. Data from studies had to be collected after 1977 3. Studies had to concern full term, healthy babies 4. Any study design was included 5. Studies had to investigate the reconstitution of formula feeds <p>Medline, CINAHL (1966 to April 2002), Web of Science and the Cochrane Database of Systematic Reviews were searched</p> <p>No quality criteria were systematically reported although quality was assessed</p>	To examine the risks associated with errors in reconstituting the present generation of formula feeds, and to examine which methods are likely to be safest	<p>Five studies were included in the review: Jacob 1985 (UK interview study) MvJunkin et al 1987 (US interview study) Lilburne et al 1988 (Australia interview study) Jeffs 1989 (UK observational study) Lucas et al 1991 (UK pilot RCT)</p> <p>Participants were mothers of artificially fed babies who had been selected or identified through routine child health or welfare clinics or bottle feeding</p>	<p>No detailed information was provided on the results for each of the included studies.</p> <p>The authors state that due to the studies' methodological problems and small sample sizes, the results were difficult to interpret. All studies, however, found errors in reconstitution with a tendency to over-concentrate feeds, although under-concentration also occurred</p> <p>The results from the one RCT were not reported as the study was part of the pilot phase of a small trial</p> <p>The authors state that there is no unbiased source of information to help parents or their advisers choose between brands of formula, including the different forms in which they are sold</p>	Relevant	<p>This SR demonstrates that there is a lack of good quality evidence on the subject, and that there is a clear need to further investigate the risks associated with reconstitution of formula</p> <p>Funding – none stated</p>

			<p>mothers from a postnatal ward</p> <p>Overall, the studies evaluated mothers from all types of socio-economic backgrounds</p> <p>The RCT compared ready-to-feed with powdered formula</p>			
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What are the most effective methods to express breast milk?

First author, Year, Country, Study design, Quality	Study population	Research question Study quality	Intervention	Main results	Applicability to UK populations and settings	Confounders / Comments Funding																																																																								
Auerbach 1990 USA (Chicago) RCT 1+	<p><u>Inclusion criteria</u> Delivered at study hospital Anticipating returning to work or school and planning to pump during periods of separation or were already experiencing such separations</p> <p><u>Exclusion criteria</u> None reported</p> <p><u>Sample size</u> 26 women were recruited Women were their own control</p> <p><u>Participant Characteristics (mothers)</u> Primiparity 80% Multiparity (2 babies) 20% Age in y modal/median (SD) range 31 (5.5) 21-42 Ethnicity: Asian 2% Black 24% White 68% Marital status: Married 92% Single 8%</p> <p><u>Participant Characteristics (infants)</u> Age in w: mean range 12, 5 – 35 Feeding % Exc bf 60 bf and ff 24</p>	<p>To compare sequential single-breast pumping with simultaneous double-breast pumping to determine if (a)milk volume differed by different pumping regimen, (b) the time needed to pump the breasts differed by pumping regiment and (c) the milk fat concentrations differed by pumping regimen</p> <p>Power calculation not reported</p> <p>The breast pumped first was assigned using a table of random numbers</p>	<p>Each mother was asked to pump milk on 4 separate occasions with an electric intermittent vacuum pump using one of four possible regimens on each occasion.</p> <p>a) 5-min sequential pumping (breast pumped first randomly assigned)</p> <p>b) 5-min simultaneous pumping</p> <p>c) Unlimited sequential pumping (breast pumped first randomly assigned)</p> <p>d) Unlimited simultaneous pumping</p> <p>Style of pumping used at each pumping session was randomly assigned</p>	<p><u>Age of baby (w) and mean milk volumes (g) obtained by pumping regimen</u></p> <table border="1"> <tr> <td></td> <td><8</td> <td>8-11</td> <td>12-15</td> <td>16+</td> </tr> <tr> <td>5-mins Sq¹</td> <td>81</td> <td>83</td> <td>121</td> <td>84</td> </tr> <tr> <td>5-mins Sm²</td> <td>109</td> <td>120</td> <td>125</td> <td>101</td> </tr> <tr> <td>Unlim³ S</td> <td>99</td> <td>119</td> <td>141</td> <td>122</td> </tr> <tr> <td>Unlim Sm</td> <td>137</td> <td>90</td> <td>119</td> <td>119</td> </tr> </table> <p><u>One-way x² df p</u></p> <table border="1"> <tr> <td><8 w</td> <td>15.4</td> <td>3</td> <td>0.01</td> </tr> <tr> <td>8 – 11 w</td> <td>10.08</td> <td>3</td> <td>0.02</td> </tr> <tr> <td>12 – 15 w</td> <td>2.34</td> <td>3</td> <td>ns</td> </tr> <tr> <td>16+</td> <td>8.74</td> <td>3</td> <td>0.05</td> </tr> </table> <p><u>Unlimited Pumping time in mins.</u></p> <table border="1"> <tr> <td></td> <td>Mean</td> <td>Range</td> </tr> <tr> <td>Unlim Sq</td> <td>10.6</td> <td>7-22</td> </tr> <tr> <td>Unlim Sm</td> <td>12</td> <td>5-22</td> </tr> </table> <p>12% pumped same time for Sq and Sm 68% pumped longer for Sm 20% pumped longer with Sq</p> <p><u>Sq v Sm pumping</u></p> <table border="1"> <tr> <td></td> <td>5-min Sq</td> <td>5-min Sm</td> <td>Unlim Sq</td> <td>Unlim Sm</td> </tr> <tr> <td>Mean</td> <td>88.56</td> <td>111.28</td> <td>114.36</td> <td>126.04</td> </tr> </table> <p><u>Paired 2-tailed test diffs between means</u></p> <table border="1"> <tr> <td>5-min Sq v 5-min Sm</td> <td>2.37</td> <td>p<.02</td> </tr> <tr> <td>5-min Sq v unlim Sq</td> <td>2.39</td> <td>p<.02</td> </tr> <tr> <td>5-min Sq v unlim Sm</td> <td>2.99</td> <td>p<.006</td> </tr> <tr> <td>5-min Sm v unlim Sm</td> <td>1.40</td> <td>ns</td> </tr> </table>		<8	8-11	12-15	16+	5-mins Sq ¹	81	83	121	84	5-mins Sm ²	109	120	125	101	Unlim ³ S	99	119	141	122	Unlim Sm	137	90	119	119	<8 w	15.4	3	0.01	8 – 11 w	10.08	3	0.02	12 – 15 w	2.34	3	ns	16+	8.74	3	0.05		Mean	Range	Unlim Sq	10.6	7-22	Unlim Sm	12	5-22		5-min Sq	5-min Sm	Unlim Sq	Unlim Sm	Mean	88.56	111.28	114.36	126.04	5-min Sq v 5-min Sm	2.37	p<.02	5-min Sq v unlim Sq	2.39	p<.02	5-min Sq v unlim Sm	2.99	p<.006	5-min Sm v unlim Sm	1.40	ns	<p>Likely that these findings are applicable to UK</p> <p>Results only apply to 1 make of pumping equipment</p>	<p>Not stated whether those measuring the outcomes were aware of the pumping regimen used</p> <p>Funded in part by Medela – manufacturer of the pumps used</p>
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	bf and solids 12 bf and ff and solids 4 No. of bf/day mean weekdays 6 weekends 8 Infants were 5 to 35 weeks of age			5-min Sq v unlim Sq 0.28 ns Unlim Sq v unlim Sm 1.07 ns <u>Creamatocrit by pumping regimen</u> Pumping Reg Range Median Mean (%) 5-min Sq 0-13 6 6.52 5-min Sm 0-17 6-7 7.26 Unlim Sq 0-14 6-7 7.18 Unlim Sm 0-15 7-8 7.70 No sig differences between breasts or by pumping regimen <u>Mother's preference of pumping regimen</u> By a margin of 3:1 mothers preferred double pumping regimen. Mother's preferences influenced mean milk volumes obtained in the direction of the women's preferences ¹ Sequential ² Simultaneous ³ Unlimited The authors concluded that simultaneous double pumping obtained higher mean milk volumes, but that differences in milk fat concentrations were not statistically significant between pumping regimens		

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<p>Fewtrell 2001</p> <p>UK (Cambridge)</p> <p>RCT</p> <p>1+</p>	<p><u>Inclusion criteria</u> Mothers who had delivered a term infant at study hospital Breastfeeding on postnatal ward</p> <p><u>Exclusion criteria</u> None stated</p> <p><u>Sample size</u> Recruited 60 MP¹ first 32 MEP² first 28</p> <p><u>Participant Characteristics (women)</u> Mean age y (SD) 32(5) Social Class 1/2 71% Education Degree/professional 70% Primiparity 58% Multiparity 41% Bf prev child 38% Prev pump use 60% -</p> <p>¹Manual pump ²Mini-electric pump</p>	<p>To compare the efficacy of a mini-electric pump (MEP) and a novel manual breast pump (MP)</p> <p><u>Power calculation</u> 60 participants would enable a difference of around 0.5oz to be detected between pumps with 80% power at 5% significance</p> <p>Randomisation was made using permuted blocks of length; assignments were held in sealed opaque envelopes</p>	<p>Each pump was tested on a single occasion during mid to late morning when the infant was approximately 8 weeks old</p> <p>The mother used the pump for 20 minutes (10 minutes each side) in presence of 2 research staff</p> <p>Milk was collected into pre-weighed sterilised bottles at 1 minute intervals.</p> <p>Mothers were given each pump 48 hours before measurements were made</p> <p>2nd pump tested 2-3 days after 1st</p>	<p>Mean weight of milk (g) regardless of order</p> <table border="1"> <thead> <tr> <th></th> <th>MP (SD)</th> <th>MEP (SD)</th> <th></th> </tr> </thead> <tbody> <tr> <td></td> <td>144 (64)</td> <td>146 (65)</td> <td></td> </tr> </tbody> </table> <p>difference not significant</p> <p>Mean weight and fat content at 1-minute intervals: differences were not significant with the same pattern of increasing fat content with both pumps</p> <p><u>Mean weight of milk (g) according to pump order</u></p> <table border="1"> <thead> <tr> <th></th> <th>MP (SD)</th> <th>MEP (SD)</th> <th>p</th> </tr> </thead> <tbody> <tr> <td>First pump</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Side 1</td> <td>81.4(43.2)</td> <td>68.5 (37.4)</td> <td>.008</td> </tr> <tr> <td>Side 2</td> <td>59.9 (33.6)</td> <td>51.3 (27.5)</td> <td></td> </tr> <tr> <td>Total</td> <td>142 (60)</td> <td>118 (44)</td> <td></td> </tr> <tr> <td>Second pump</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Side 1</td> <td>80.7 (37.9)</td> <td>93.2 (49.5)</td> <td></td> </tr> <tr> <td>Side 2</td> <td>66.1 (43.5)</td> <td>72.3 (43)</td> <td></td> </tr> <tr> <td>Total</td> <td>149 (71)</td> <td>164 (73)</td> <td></td> </tr> </tbody> </table> <p>Weight of milk using second pump, irrespective of pump type, was sig. higher than first pump 158g (72g) vs 133g (54g) p=.008</p> <p>Peak fat content was not significantly different between first and second pump.</p> <p>No. hours since last feed: 1.8 (1.0) hours for both pumps</p> <p>No of feeds in last 24 hrs: 8 (3) feeds for both</p> <p>Duration of last feed: 19 (16) mins (MP), 15 (11) mins (MEP) diff. not sig.</p>		MP (SD)	MEP (SD)			144 (64)	146 (65)			MP (SD)	MEP (SD)	p	First pump				Side 1	81.4(43.2)	68.5 (37.4)	.008	Side 2	59.9 (33.6)	51.3 (27.5)		Total	142 (60)	118 (44)		Second pump				Side 1	80.7 (37.9)	93.2 (49.5)		Side 2	66.1 (43.5)	72.3 (43)		Total	149 (71)	164 (73)		<p>Conducted in UK</p> <p>Sample was predominantly social class 1 and 2 and well –educated.</p> <p>Acceptability of using pumps may be different in low income groups</p>	<p>Funded by a grant from Canon Avent (manufacturers of the breast pumps) who also provided the pumps</p>
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				<p>Effect of time since start of prev bf on total amount of milk expressed during 1st pumping session Increase of 23mls/hour since last feed [95% CI =9 to 38]</p> <p>Effect of time since start of prev bf on peak fat content both pumping sessions Decrease of 0.83g/dlper hour since last feed for 1st pump and 0.28g/dl per hour for 2nd pump</p> <p><u>Maternal opinions of pumps %</u></p> <table border="1"> <thead> <tr> <th>Rank†</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> </tr> </thead> <tbody> <tr> <td colspan="8">Comfortable to use</td> </tr> <tr> <td>MP*</td> <td>45</td> <td>28</td> <td>13</td> <td>8</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>MEP</td> <td>5</td> <td>5</td> <td>15</td> <td>45</td> <td>12</td> <td>7</td> <td>2</td> </tr> <tr> <td colspan="8">Pleasant to use</td> </tr> <tr> <td>MP*</td> <td>38</td> <td>20</td> <td>15</td> <td>17</td> <td>7</td> <td>2</td> <td></td> </tr> <tr> <td>MEP</td> <td>3</td> <td>17</td> <td>15</td> <td>33</td> <td>23</td> <td>3</td> <td>5</td> </tr> <tr> <td colspan="8">Overall opinion</td> </tr> <tr> <td>MP**</td> <td>32</td> <td>37</td> <td>20</td> <td>8</td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>MEP</td> <td>7</td> <td>35</td> <td>30</td> <td>17</td> <td>10</td> <td>2</td> <td></td> </tr> </tbody> </table> <p>†1 = best score *p<.001 (Wilcoxon signed rank test for MP v MEP) ** p=.001</p> <p>The authors concluded that there was no significant difference in the milk volume or fat content between the mini-electric pump and the manual breast pump</p>	Rank†	1	2	3	4	5	6	7	Comfortable to use								MP*	45	28	13	8	3			MEP	5	5	15	45	12	7	2	Pleasant to use								MP*	38	20	15	17	7	2		MEP	3	17	15	33	23	3	5	Overall opinion								MP**	32	37	20	8	2			MEP	7	35	30	17	10	2			
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Zinaman 1992 USA (Washin gton) RCT 1-	<p><u>Inclusion criteria</u> Mothers who were exclusively breastfeeding</p> <p><u>Exclusion criteria</u> None stated</p> <p><u>Sample size</u> N=23</p> <p><u>Participant characteristics</u> The women were between the ages of 22 and 32, and were 28 to 42 days postpartum, had normal deliveries, non-smokers, in good health and had no history of endocrine disease</p>	<p>To evaluate four types of milk expression (electric, battery, mechanical and manual) compared to infant suckling on prolactin and oxytocin release and milk volumes</p> <p>Sample size not calculated</p> <p>The authors do not state methods of randomisation, or allocation of concealment Each woman was randomly assigned to begin with one of the five methods, and then randomly assigned to one the remaining methods until all five had been tested</p>	<p>1) Electric expression: The pulsatile White River Electric (WRE)</p> <p>2) Battery expression: The Gentle Expression (GEB)</p> <p>3) Mechanical expression: Medela Manuelectric (MM)</p> <p>4) Manual expression: Hand expression was taught according to the Marmet technique</p> <p>5) Infant suckling</p> <p>Breasts were individually pumped for up to 15 minutes.</p> <p>Blood was taken at 10-minute intervals</p>	<p><u>Prolactin levels:</u> Infant suckling and electric expression using the White River Electric pump demonstrated significantly greater prolactin levels in comparison to the other three methods ($p < 0.05$). Infant suckling reached a mean peak level of 89.7 ng/mL at 40 minutes, the WRE reached a mean peak level of 95.4 ng/mL at 30 minutes and remained elevated through the 60-minute period study. The GEB rose to a maximum mean value of 59.7 ng/mL at 60 min. The MM and hand expression methods were similar, with levels rising to 67 ng/mL by 40 min</p> <p><u>Oxytocin levels:</u> As expected, mothers exhibited peak oxytocin values prior to the initiation of breast feeding. This was not observed in any of the artificial methods. No significant differences were observed among the methods for oxytocin values (increase from baseline, or total values)</p> <p>Levels of plasma oxytocin over the 60 min sampling session:</p> <table border="1" data-bbox="1014 884 1637 1066"> <thead> <tr> <th>Method</th> <th>Mean Net area under curves</th> <th>SEM</th> </tr> </thead> <tbody> <tr> <td>Infant</td> <td>224.7</td> <td>75.4</td> </tr> <tr> <td>White River Electric</td> <td>174.1</td> <td>41.3</td> </tr> <tr> <td>Medela Manuelectric</td> <td>218.5</td> <td>157.5</td> </tr> <tr> <td>Hand expression</td> <td>140.5</td> <td>66.5</td> </tr> <tr> <td>Battery expression</td> <td>186.7</td> <td>67.6</td> </tr> </tbody> </table> <p><u>Milk volume:</u> Hand expression and GEB produced significantly less milk than the WRE pump (p value not reported). The authors state that the MM pump was not significantly different from the other three methods (Mean milk volumes were presented in a graph, and numbers could not be extracted)</p> <p>The authors state that there is a need for further studies to be conducted in order to enable women and health care providers to choose the most appropriate method of milk expression.</p>	Method	Mean Net area under curves	SEM	Infant	224.7	75.4	White River Electric	174.1	41.3	Medela Manuelectric	218.5	157.5	Hand expression	140.5	66.5	Battery expression	186.7	67.6	<p>Based on a search of www.breastpumps.co.uk, only the Medela breastpump appears to be readily available in the UK.</p>	<p>Results based on a 60-minute study need to be substantiated with further research</p> <p>The authors note that the actual time spent using each pumping technique varied over the 60-minute period. In addition, the WRE method pumps both breasts simultaneously (serum prolactin may be higher using bilateral stimulation)</p> <p>The study was supported by the Institute for International Studies in Natural Family Planning through a cooperative agreement with the US Agency for International Development</p>
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What supplemental feeding modes (e.g. cup, spoon, bottle) are most effective?

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Field 1997 USA (Miami) RCT 1-	<p><u>Inclusion criteria</u> Mothers who had been bottlefeeding their first born infants for 1 month were included</p> <p><u>Exclusion criteria</u> Breastfeeding infants were excluded</p> <p><u>Sample size</u> N=40 (18 female and 22 male)</p> <p><u>Participant characteristics</u> One-month old infants (mean age: 1.1 month, range: 21-42 days) None of the infants had any feeding problems</p> <p>Mothers had a mean age of 23.8 years (range: 17-38 years)</p> <p>Low SES (mean 4.2 on the Hollingshead Index) 45% African-American 38% Hispanic 17% Caucasian</p>	<p>To compare bottlefeedings using a breast feeding-like teat (Healthflow) with a standard teat (Evenflo) on vagal activity and wakefulness in one-month old infants</p> <p>Sample size not calculated Infants were randomised using a random numbers table; feeding sessions were videotaped and coded by a research assistant who was blind to group assignment; no dropouts reported</p>	<p>Intervention: Infants received one 20-minute bottlefeeding by infants mothers using a breast-like teat (Healthflow) (n=20)</p> <p>Control: Infants received one 20-minute bottle feeding by infants mothers using a standard teat (Evenflo) (n=20)</p> <p>The same type of bottle was used in both groups and the infants received their own formula. The feeding occurred early morning</p>	<p>(significance values were obtained using Hotelling's T² followed by Bonferroni t tests)</p> <p><u>Infant behaviours (% time during the feeding)*</u></p> <table border="1"> <thead> <tr> <th></th> <th>Healthflow</th> <th>Evenflo</th> <th>p level</th> </tr> </thead> <tbody> <tr> <td>active sleep</td> <td>3.7 (1.3)</td> <td>16.8 (4.7)</td> <td>0.05</td> </tr> <tr> <td>drowsiness</td> <td>13.0 (3.1)</td> <td>15.4 (2.4)</td> <td>NS</td> </tr> <tr> <td>quiet awake</td> <td>23.0 (3.0)</td> <td>23.0 (3.4)</td> <td>NS</td> </tr> <tr> <td>active awake</td> <td>10.7 (2.6)</td> <td>5.8 (1.9)</td> <td>0.05</td> </tr> <tr> <td>fussing/crying</td> <td>1.6 (0.6)</td> <td>6.8 (2.3)</td> <td>0.05</td> </tr> </tbody> </table> <p>(Heart rate was monitored by placing three EKG electrodes on infant's chest. The data were converted to inter-beat intervals (IBI) and to vagal tone using computer software)</p> <p><u>Vagal tone changes</u></p> <table border="1"> <thead> <tr> <th></th> <th>Healthflow</th> <th>Evenflo</th> <th>p level</th> </tr> </thead> <tbody> <tr> <td>during feeding</td> <td>-0.55</td> <td>-0.26</td> <td>0.05</td> </tr> <tr> <td>after feeding</td> <td>+0.82</td> <td>+0.18</td> <td>0.05</td> </tr> </tbody> </table> <p><u>Salivary cortisol change</u> -1.36 -0.54 0.01</p> <p>Other outcomes measures included mother behaviours, sucking behaviour (the number of sucks) and formula consumed</p> <p>The authors state that infants who fed on the breast-like teats (Healthflow) spent less time asleep, more time awake and active and less time fussing and crying (during feeding). The vagal tone of the intervention group infants decreased more during bottle feeding and increased more after feeding, suggesting that the breast-like teat feedings were more similar to breastfeedings</p>		Healthflow	Evenflo	p level	active sleep	3.7 (1.3)	16.8 (4.7)	0.05	drowsiness	13.0 (3.1)	15.4 (2.4)	NS	quiet awake	23.0 (3.0)	23.0 (3.4)	NS	active awake	10.7 (2.6)	5.8 (1.9)	0.05	fussing/crying	1.6 (0.6)	6.8 (2.3)	0.05		Healthflow	Evenflo	p level	during feeding	-0.55	-0.26	0.05	after feeding	+0.82	+0.18	0.05	<p>Healthflow is available in the UK</p>	<p>Results based on one 20-minute bottlefeeding session need to be substantiated with further research</p> <p>The novelty effect of a different teat was not responsible for the differences</p> <p>Funding not stated</p>
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Included Studies

Anderson, A. K., G. Damio, et al. (2005). "A randomized trial assessing the efficacy of peer counseling on exclusive breastfeeding in a predominantly Latina low-income community." Archives of Pediatrics & Adolescent Medicine **159**(9): 836-41.

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