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Alison Price  alison.price@lpct.nhs.uk
Janet Badcock      janet.badcock@lpct.nhs.uk

**Librarians, Lincolnshire Knowledge and Resource Service**
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Guidelines

NICE The effectiveness of public health interventions to promote the duration of breastfeeding. Systematic review Part 1

Breastfeeding has a major role to play in public health. It promotes health and prevents disease in both the short and long term, for both infant and mother. But breastfeeding, especially the prolonged, exclusive breastfeeding that results in the greatest benefits, is far from universally practised in the UK and other western cultures. Breastfeeding initiation rates in the UK are around the lowest in Europe, with rapid discontinuation rates for those who do start. Further, initiation and continuation rates are lowest among families from lower socio-economic groups, adding to inequalities in health and contributing to the perpetuation of the cycle of deprivation. The reasons for this are multifaceted and include the influence of society and cultural norms, as well as clinical problems, the organisation of health services and the lack of preparation of health professionals and others to support breastfeeding effectively.

This paper summarises the findings of a systematic review of interventions to enable women to continue breastfeeding, with special reference to women from disadvantaged groups where rates are lowest. Full details are in NICE (2005). It follows on from the previous Health Development Agency (HDA) review of systematic reviews of interventions to promote the initiation of breastfeeding (Protheroe et al., 2003).

Findings

One of the main findings of this review is the great extent of the evidence gap relating to disadvantaged groups. Ways of raising breastfeeding rates among groups where the rates are lowest remain to be explored further. Although there are evidence gaps identified across all the sections, they are widest in clinical issues, public policy and those that address women’s key concerns and problems. There is an urgent need for research into clinical problems, including ‘insufficient milk’, sore nipples, engorgement and the breastfeeding needs of babies and mothers with particular health needs. There is very little research to inform any aspect of public policy. Two other important findings emerge across all sections. First, there are effective and ineffective interventions. Second, a gap in the evidence base identified across all the reviews is an understanding of the views of those most involved – childbearing women and their families, and the staff who care for them – whose voices are largely silent in relation to the interventions that might be effective. Practices and policies that have been shown to be effective/beneficial for enhancing breastfeeding duration;

Postnatal hospital stay

• Skilled breastfeeding support, peer or professional, proactively offered to women who want to breastfeed (Dennis et al., 2002; Porteous et al., 2000)
• Preventing the provision of discharge packs containing formula-feeding information and samples (Bliss et al., 1997)
• Unrestricted feeding from birth onwards (Renfrew et al., 2000)
• Unrestricted mother-baby contact from birth onwards (Renfrew et al., 2000)
• Unrestricted kangaroo care/skin-to-skin care from birth onwards (Renfrew et al., 2000)
• Avoiding supplementary fluids for babies unless medically indicated (Howard 2003)
• Regular breast drainage/continued breastfeeding for mastitis (Renfrew et al., 2000)
• Antibiotics for infective mastitis (Renfrew et al., 2000)
Postnatal care in the community
• Skilled breastfeeding support, peer or professional, proactively offered to women who want to breastfeed (Porteous et al., 2000)

Ongoing care in the community
• Skilled breastfeeding support, peer or professional (Serafino-Cross and Donovan 1992)

Forms of care/practices/policies that appear to be promising and well grounded in theory for enhancing the duration of breastfeeding

In pregnancy
• Group, interactive, culture-specific education sessions (Rossiter, 1994)
• Group education sessions on positioning and attachment (Duffy et al., 1997)
• Antenatal education individually tailored to the needs of low-income women (Brent et al., 1995)

Immediate postnatal care
• Basing prevention and treatment of sore nipples on principles of positioning and attachment (Henderson et al., 2000)
• Cabbage leaves/extract for treatment of engorgement (Roberts et al., 1995, 1998)
• Systemic antibiotics for infected nipples (Livingstone and Stringer, 1999)

Postnatal care in the community
• Self-monitoring daily log for women from higher socioeconomic groups (Pollard, 1995)
• Combination of supportive care, teaching breastfeeding technique, rest and reassurance for women with ‘insufficient milk’ (Renfrew et al., 2000)
• Division of the frenulum in infants with signs of congenital ankyloglossia [tongue tie] and breastfeeding difficulties (Ballard et al., 2002; Fitz-Desorgher, 2003; Masaitis and Kaempf, 1996)

Wider social/political issues
• National policy of encouraging maternity units to adhere to the UNICEF Baby Friendly Initiative (BFI) (Britten and Broadfoot, 2002)
• Regionally/nationally determined targets with supporting activities, and/or penalties and/or incentives (Cattaneo and Buzzetti, 2001; Giovannini et al., 2003) Multifaceted interventions (across time periods and types of interventions)
• Tailored antenatal education combined with proactive postnatal support in hospital and the community (Fredrickson, 1995)
• Combining antenatal education with partner support, postnatal support and incentives for women in low income groups (Sciaccia et al., 1995)

Forms of care/policies that may be ineffective or harmful for enhancing breastfeeding duration (as shown by good but not conclusive evidence)

In pregnancy
• Self-help manual used alone (Coombs et al., 1998)
• Antenatal education by a paediatrician (Serwint et al., 1996)
• Providing materials produced by formula milk companies on infant feeding in early pregnancy (Howard et al., 2000)

Immediate postnatal care
• Separating mothers and babies for treatment of jaundice (Renfrew et al., 2000)
**Postnatal care in the community**
- Written educational materials used alone (Hauck and Dimmock, 1994)
- GP clinic visit at one week postpartum (Gunn et al., 1998)
- Single home visit by community nurse following early discharge (Gagnon, 2002)
- Dopamine antagonists for ‘insufficient milk’ (Renfrew et al., 2000)

**Ongoing care in the community**
- Dopamine antagonists for ‘insufficient milk’ (Renfrew et al., 2000)

**Forms of care/practices/policies shown to be ineffective or harmful for breastfeeding duration**

**In pregnancy**
- Conditioning nipples in pregnancy (Renfrew et al., 2000)
- Hoffman’s exercises for inverted and non-protractile nipples in pregnancy (Renfrew et al., 2000)
- Breast shells for inverted and non-protractile nipples in pregnancy (Renfrew et al., 2000)

**Immediate postnatal care**
- Restricting the timing and/or frequency of breastfeeds (Renfrew et al., 2000)
- Restricting mother/baby contact from birth onwards (Renfrew et al., 2000)
- Routine use of supplementary fluids (Howard et al., 2000)
- Provision of discharge packs containing samples or information on formula feeding (Bliss et al., 1997)
- Topical agents for the prevention of nipple pain (Renfrew et al., 2000)
- Breast pumping before the establishment of breastfeeding in women at risk of delayed lactation (Chapman et al., 2001)

**Multifaceted interventions**
- Combined antenatal education and limited postnatal telephone support for high-income women and women who intend to breastfeed (existing high rates suggest resources are better spent elsewhere) (Rojjanasrirat, 2000)

**Conclusion**
The extent of the work needed to change the current patterns of infant feeding should not be underestimated. These patterns have been developed over the past century and are now embedded in the thinking and behaviour of several generations of practitioners and in society as a whole. A coordinated and well-supported programme will be needed if real culture and practice change is to occur. To enable women to breastfeed the evidence suggests that the following changes are needed:
- Coordination of national with local policy so that departmental policy is funded, enabled and monitored at the level of, for example, PCTs, Sure Starts, and acute trusts, with a two-way flow of information to enable both a bottom-up and a top-down approach
- Ongoing monitoring of rates of variation in infant feeding, with agreed definitions and timing of followup, combined with socio-demographic data.

It will also require the wholehearted involvement and support of:
- Clinical professionals in community and hospital settings
- Community based workers including Sure Start staff
- Managers with responsibility for health and social services and staff
- Those with responsibility for collecting health and health service-related data
• Educators in the fields of health and social services; schoolteachers and those responsible for the school curriculum in primary and secondary schools
• Employers in large and small organisations
• Politicians and policy makers at local, regional and national levels
• Those with influence over public opinion
• Families and the public at large.

**Implications for future research**
• The quality of the included studies was variable. Some were designed to provide reliable evidence of effectiveness of the interventions tested, but others were too small, methodologically flawed or used inappropriate designs. Future research should use appropriate designs and consider carefully the range of factors involved in breastfeeding, and funding agencies should be aware of the pitfalls in this field
• To address the evidence gap, breastfeeding needs to become a priority for a range of funding bodies in the UK
• Future studies should include examination of cost effectiveness
• Studies should examine the effectiveness of interventions among different disadvantaged groups


**The effectiveness of public health interventions to promote the duration of breastfeeding. Systematic review Part 2**
This document presents the findings from a systematic review of public health interventions to promote the duration of breastfeeding.

**Breastfeeding for longer - what works?**
This paper summarises the findings of a systematic review of interventions to enable women to continue breastfeeding, with special reference to women from disadvantaged groups where rates are lowest.

**The Effectiveness of Public Health Interventions to Promote the Initiation of Breastfeeding**
This Evidence Briefing Summary brings together knowledge from available research evidence about key characteristics of successful interventions and programmes for promoting breastfeeding among new mothers.

**Commissioning Guide: Peer-support programme for women who breastfeed**
This commissioning guide is a resource to help health professionals in England to commission an effective peer-support programme for women who breastfeed.
[http://www.nice.org.uk/usingguidance/commissioningguides/breastfeed/breastfeed.jsp](http://www.nice.org.uk/usingguidance/commissioningguides/breastfeed/breastfeed.jsp)

**Map of Medicine – Breastfeeding**
Evidence

Cochrane Systematic Reviews

Interventions for promoting the initiation of breastfeeding

Background
Despite the widely documented health advantages of breastfeeding over formula feeding, initiation rates remain relatively low in many high-income countries, particularly among women in lower income groups.

Objectives
To evaluate the effectiveness of interventions which aim to encourage women to breastfeed in terms of changes in the number of women who start to breastfeed.

Search strategy
We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (July 2007), handsearched the Journal of Human Lactation, Health Promotion International and Health Education Quarterly from inception to 15 August 2007, and scanned reference lists of all articles obtained.

Selection criteria
Randomised controlled trials, with or without blinding, of any breastfeeding promotion intervention in any population group except women and infants with a specific health problem.

Data collection and analysis
One review author independently extracted data and assessed trial quality, checked by a second author. We contacted investigators to obtain missing information.

Main results
Eleven trials were included. Statistical analyses were conducted on data from eight trials (1553 women). Five studies (582 women) on low incomes in the USA with typically low breastfeeding rates showed breastfeeding education had a significant effect on increasing initiation rates compared to standard care (risk ratio (RR) 1.57, 95% confidence interval (CI) 1.15 to 2.15, P = 0.005). Subgroup analyses showed that one-to-one, needs-based, informal repeat education sessions and generic, formal antenatal education sessions are effective in terms of an increase in breastfeeding rates among women on low incomes regardless of ethnicity and feeding intention. Needs-based, informal peer support in the antenatal and postnatal periods was also shown to be effective in one study conducted among Latina women who were considering breastfeeding in the USA (RR 4.02, 95% CI 2.63 to 6.14, P < 0.00001).

Authors’ conclusions
This review showed that health education and peer support interventions can result in some improvements in the number of women beginning to breastfeed. Findings from these studies suggest that larger increases are likely to result from needs-based, informal repeat education sessions than more generic, formal antenatal sessions. These findings are based only on studies conducted in the USA, among women on low incomes with varied ethnicity and feeding intention, and this raises some questions regarding generalisability to other settings.

http://dx.doi.org/10.1002/14651858.CD001688.pub2
Optimal duration of exclusive breastfeeding

Background
Although the health benefits of breastfeeding are widely acknowledged, opinions and recommendations are strongly divided on the optimal duration of exclusive breastfeeding. Much of the debate has centered on the so-called 'weanling's dilemma' in developing countries: the choice between the known protective effect of exclusive breastfeeding against infectious morbidity and the (theoretical) insufficiency of breast milk alone to satisfy the infant's energy and micronutrient requirements beyond four months of age.

Objectives
To assess the effects on child health, growth, and development, and on maternal health, of exclusive breastfeeding for six months versus exclusive breastfeeding for three to four months with mixed breastfeeding (introduction of complementary liquid or solid foods with continued breastfeeding) thereafter through six months.

Search strategy
We searched the following databases: MEDLINE (as of 1966), Index Medicus (before 1966), CINAHL, HealthSTAR, BIOSIS, CAB Abstracts, EMBASE-Medicine, EMBASE-Psychology, EconLit, Index Medicus for the WHO Eastern Mediterranean Region, African Index Medicus, LILACS (Latin American and Caribbean Health Sciences), EBM Reviews-Best Evidence, the Cochrane Database of Systematic Reviews, and the Cochrane Central Register of Controlled Trials. The two searches yielded a total of 2668 unique citations. Contacts with experts in the field yielded additional published and unpublished studies. The updated review extended the literature searched until December 2006 and yielded 835 additional unique citations.

Selection criteria
We selected all internally-controlled clinical trials and observational studies comparing child or maternal health outcomes with exclusive breastfeeding for six or more months versus exclusive breastfeeding for at least three to four months with continued mixed breastfeeding until at least six months. Studies were stratified according to study design (controlled trials versus observational studies), provenance (developing versus developed countries), and timing of compared feeding groups (three to seven months versus later).

Data collection and analysis
We independently assessed study quality and extracted data.

Main results
We identified 22 independent studies meeting the selection criteria: 11 from developing countries (two of which were controlled trials in Honduras) and 11 from developed countries (all observational studies). Definitions of exclusive breastfeeding varied considerably across studies. Neither the trials nor the observational studies suggest that infants who continue to be exclusively breastfed for six months show deficits in weight or length gain, although larger sample sizes would be required to rule out modest differences in risk of undernutrition. In developing-country settings where newborn iron stores may be suboptimal, the evidence suggests that exclusive breastfeeding without iron supplementation through six months may compromise hematologic status. Based on studies from Belarus, Iran, and Nigeria, infants who continue exclusive breastfeeding for six months or more appear to have a significantly reduced risk of gastrointestinal and...
(in the Iranian and Nigerian studies) respiratory infection. No significant reduction in risk of atopic eczema, asthma, or other atopic outcomes has been demonstrated in studies from Finland, Australia, and Belarus. Data from the two Honduran trials and from observational studies from Bangladesh and Senegal suggest that exclusive breastfeeding through six months is associated with delayed resumption of menses and, in the Honduran trials, more rapid postpartum weight loss in the mother.

Authors' conclusions
We found no objective evidence of a 'weanling's dilemma'. Infants who are exclusively breastfed for six months experience less morbidity from gastrointestinal infection than those who are mixed breastfed as of three or four months, and no deficits have been demonstrated in growth among infants from either developing or developed countries who are exclusively breastfed for six months or longer. Moreover, the mothers of such infants have more prolonged lactational amenorrhea. Although infants should still be managed individually so that insufficient growth or other adverse outcomes are not ignored and appropriate interventions are provided, the available evidence demonstrates no apparent risks in recommending, as a general policy, exclusive breastfeeding for the first six months of life in both developing and developed-country settings. Large randomized trials are recommended in both types of setting to rule out small effects on growth and to confirm the reported health benefits of exclusive breastfeeding for six months or beyond.

http://dx.doi.org/10.1002/14651858.CD003517

Support for breastfeeding mothers
Background
There is extensive evidence of the benefits of breastfeeding for infants and mothers. In 2003, the World Health Organization (WHO) recommended infants be fed exclusively on breast milk until six months of age. However, breastfeeding rates in many developed countries continue to be resistant to change.

Objectives
To assess the effectiveness of support for breastfeeding mothers.

Search strategy

We updated the search of the Cochrane Pregnancy and Childbirth Group's Trials Register on 27 July 2009 and added the results to the awaiting classification section.

Selection criteria
Randomised or quasi-randomised controlled trials comparing extra support for breastfeeding mothers with usual maternity care.

Data collection and analysis
Two authors independently assessed trial quality and extracted data.

Main results
We have included 34 trials (29,385 mother-infant pairs) from 14 countries. All forms of extra support analysed together showed an increase in duration of 'any breastfeeding'
(includes partial and exclusive breastfeeding) (relative risk (RR) for stopping any breastfeeding before six months 0.91, 95% confidence interval (CI) 0.86 to 0.96). All forms of extra support together had a larger effect on duration of exclusive breastfeeding than on any breastfeeding (RR 0.81, 95% CI 0.74 to 0.89). Lay and professional support together extended duration of any breastfeeding significantly (RR before 4-6 weeks 0.65, 95% CI 0.51 to 0.82; RR before 2 months 0.74, 95% CI 0.66 to 0.83). Exclusive breastfeeding was significantly prolonged with use of WHO/UNICEF training (RR 0.69, 95% CI 0.52 to 0.91). Maternal satisfaction was poorly reported.

Authors' conclusions
Additional professional support was effective in prolonging any breastfeeding, but its effects on exclusive breastfeeding were less clear. WHO/UNICEF training courses appeared to be effective for professional training. Additional lay support was effective in prolonging exclusive breastfeeding, while its effects on duration of any breastfeeding were uncertain. Effective support offered by professionals and lay people together was specific to breastfeeding and was offered to women who had decided to breastfeed.

Further trials are required to assess the effectiveness (including cost-effectiveness) of both lay and professional support in different settings, particularly those with low rates of breastfeeding initiation, and for women who wish to breastfeed for longer than three months. Trials should consider timing and delivery of support interventions and relative effectiveness of intervention components, and should report women's views. Research into appropriate training for supporters (whether lay or professional) of breastfeeding mothers is also needed.

[Note: The 79 citations in the awaiting classification section of the review may alter the conclusions of the review once assessed.]

http://dx.doi.org/10.1002/14651858.CD001141.pub3
Research

Extending breastfeeding duration through primary care: a systematic review of prenatal and postnatal interventions.
This literature review provides an overview of the effectiveness of strategies and procedures used to extend breastfeeding duration. Interventions carried out during pregnancy and/or infant care conducted in primary health care services, community settings, or hospital clinics were included. Interventions covering only the delivery period were excluded. Interventions that were most effective in extending the duration of breastfeeding generally combined information, guidance, and support and were long term and intensive. During prenatal care, group education was the only effective strategy reported. Home visits used to identify mothers’ concerns with breastfeeding, assist with problem solving, and involve family members in breastfeeding support were effective during the postnatal period or both periods. Individual education sessions were also effective in these periods, as was the combination of 2 or 3 of these strategies in interventions involving both periods. Strategies that had no effect were characterized by no face-to-face interaction, practices contradicting messages, or small-scale interventions.

Breastfeeding promotion for infants in neonatal units: a systematic review and economic analysis.
Renfrew MJ, Craig D, Dyson L, McCormick F, Rice S, King SE, Misso K, Stenhouse E, Mother and Infant Research Unit, Department of Health Sciences, University of York, UK.
OBJECTIVES: To evaluate the effectiveness and cost-effectiveness of interventions that promote or inhibit breastfeeding or feeding with breastmilk for infants admitted to neonatal units, and to identify an agenda for future research. DATA SOURCES: Electronic databases were searched (including MEDLINE and MEDLINE In-Process Citations, EMBASE, CINAHL, Maternity and Infant Care, PsycINFO, British Nursing Index and Archive, Health Management Information Consortium, Cochrane Central Register of Controlled Trials, Science Citation Index, Pascal, Latin American and Caribbean Health Sciences, MetaRegister of Controlled Trials, Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effectiveness, Health Technology Assessment Database, National Research Register) from inception to February 2008. Advisors identified further published or unpublished material. REVIEW METHODS: All papers fulfilled eligibility criteria covering participants, interventions, study design and outcomes. Results from primary studies were assessed and summarised in a qualitative synthesis for each type of intervention and across types of intervention. To estimate long-term cost utility, a decision tree was developed to synthesise data on enhanced staff contact, breastmilk effectiveness, incidence of necrotising enterocolitis (NEC) and sepsis, resource use, survival and utilities. RESULTS: Forty-eight studies met the selection criteria for the effectiveness review, of which 65% (31/48) were RCTs, and 17% (8/48) were conducted in the UK. Seven were rated as good quality and 28 as moderate quality. No studies met the selection criteria for the health economics review. There is strong evidence that short periods of kangaroo
skin-to-skin contact increased the duration of any breastfeeding for 1 month after discharge [risk ratio (RR) 4.76, 95% confidence interval (CI) 1.19 to 19.10] and for more than 6 weeks (RR 1.95, 95% CI 1.03 to 3.70) among clinically stable infants in industrialised settings. There is strong evidence for the effectiveness of peer support at home (in Manila) for mothers of term, low birthweight infants on any breastfeeding up to 24 weeks (RR 2.18, 95% CI 1.45 to 3.29) and exclusive breastfeeding from birth to 6 months (RR 65.94, 95% CI 4.12 to 1055.70), and for the effectiveness of peer support in hospital and at home for mothers of infants in Special Care Baby Units on providing any breastmilk at 12 weeks [odds ratio (OR) 2.81, 95% CI 1.11 to 7.14; p = 0.01]. There is more limited evidence for the effectiveness of skilled professional support in a US Neonatal Intensive Care Unit on infants receiving any breastmilk at discharge (OR 2.0, 95% CI 1.2 to 3.2, p = 0.004). Multidisciplinary staff training may increase knowledge and can increase initiation rates and duration of breastfeeding, although evidence is limited. Lack of staff training is an important barrier to implementation of effective interventions. Baby Friendly accreditation of the associated maternity hospital results in improvements in several breastfeeding-related outcomes for infants in neonatal units. Limited evidence suggests that cup feeding (versus bottle feeding) may increase breastfeeding at discharge and reduce the frequency of oxygen desaturation. Breastmilk expression using simultaneous pumping with an electric pump has advantages in the first 2 weeks. Pharmaceutical galactagogues have little benefit among mothers who have recently given birth. Our economic analysis found that additional skilled professional support in hospital was more effective and less costly (due to reduced neonatal illness) than normal staff contact. Additional support ranged from 0.009 quality-adjusted life-years (QALYs) to 0.251 QALYs more beneficial per infant and ranged from 66 pounds to 586 pounds cheaper per infant across the birthweight subpopulations. Donor milk would become cost-effective given improved mechanisms for its provision. CONCLUSIONS: Despite the limitations of the evidence base, kangaroo skin-to-skin contact, peer support, simultaneous breastmilk pumping, multidisciplinary staff training and the Baby Friendly accreditation of the associated maternity hospital have been shown to be effective, and skilled support from trained staff in hospital has been shown to be potentially cost-effective. All these point to future research priorities. Many of these interventions inter-relate: it is unlikely that specific clinical interventions will be effective if used alone. There is a need for national surveillance of feeding, health and cost outcomes for infants and mothers in neonatal units; to assist this goal, we propose consensus definitions of the initiation and duration of breastfeeding/breastmilk feeding with specific reference to infants admitted to neonatal units and their mothers.
A systematic review of professional support interventions for breastfeeding.  
J Clin Nurs. 2008 May;17(9):1132-43.  
Hannula L, Kaunonen M, Tarkka MT.  
OBJECTIVES: The objectives of this systematic review were first, to describe how breastfeeding is professionally supported during pregnancy, at maternity hospitals and during the postnatal period. Secondly, to find out how effective interventions are in supporting breastfeeding. BACKGROUND: Breastfeeding is an effective way to promote the health of infants. In many countries, the rates for breastfeeding remain lower than recommended. Many studies have examined breastfeeding promotion interventions; some of them are successful and some fail. It is important to find effective combinations of support. DESIGN: Systematic review. METHODS: Search of CINAHL, Medline and Cochrane Central Register databases were conducted for data collection. The search was limited to articles published in Finnish, Swedish and English between the year 2000 and March 2006, focusing on breastfeeding and breastfeeding support interventions. Two reviewers independently analysed 36 articles in the final analysis. RESULTS: Interventions expanding from pregnancy to the intrapartum period and throughout the postnatal period were more effective than interventions concentrating on a shorter period. In addition, intervention packages using various methods of education and support from well-trained professionals are more effective than interventions concentrating on a single method. CONCLUSIONS: During pregnancy, the effective interventions were interactive, involving mothers in conversation. The Baby Friendly Hospital Initiative (BFHI) as well as practical hands off teaching, when combined with support and encouragement, were effective approaches. Postnatally effective were home visits, telephone support and breastfeeding centres combined with peer support. Relevance to clinical practice. Professionals need breastfeeding education and support of their organisations to act as breastfeeding supporters. The BFHI programme is effective and it would be wise to include the core components of the programme in breastfeeding promotion interventions. Mothers benefit from breastfeeding encouragement and guidance that supports their self-efficacy and feelings of being capable and empowered, and is tailored to their individual needs.

A systematic review of education and evidence-based practice interventions with health professionals and breast feeding counsellors on duration of breast feeding.  
Spiby H, McCormick F, Wallace L, Renfrew MJ, D'Souza L, Dyson L.  
Mother and Infant Research Unit, Department of Health Sciences, Area 4, Sebohm Rowntree Building, Heslington, York YO10 5DD, UK. hs507@york.ac.uk  
OBJECTIVE: to examine the effects of training, education and practice change interventions with health professionals and lay breast feeding educator/counsellors on duration of breast feeding. REVIEW METHODS: this was part of a series of reviews of interventions that affect duration of breast feeding. Full details of methods used, including search strategy, are reported separately. SELECTION CRITERIA FOR INCLUDED STUDIES: randomised controlled trials, non randomised controlled trials with concurrent controls and before after studies (cohort or cross-sectional), undertaken in a developed country, published between 1980 and 2003 in any language. The primary outcome was duration of breast feeding. Secondary and process outcomes, including attitude, knowledge and
behaviour change of participants, were included from papers that also reported breast feeding duration outcomes. STUDY-QUALITY ASSESSMENT: inclusion and exclusion criteria were applied, data extracted and study quality assessments made by one reviewer and independently checked by another, with a third reviewer to resolve differences, as recommended by the NHS Centre for Reviews and Dissemination's guidance for reviews. FINDINGS: the search identified nine papers. All were before after studies that included the education of health professionals; no studies were identified that related to breast feeding counsellors. In six of the studies, the participants were working with mothers and babies in hospitals (three in the UK, two in Italy and one in France); in three studies, the participants were working in community settings (Canada, Spain and the USA). Two UK studies and two non-UK studies (Spain and USA) involved mothers living in disadvantaged areas. Most interventions aimed to increase knowledge and change professional practice in support of breast feeding. KEY CONCLUSIONS: many of the studies reviewed have methodological limitations. Study settings and contexts vary and lack comparability. Evidence from these studies was insufficient to draw conclusions about overall benefit or harm associated with the interventions. From the studies identified, there seems to be no single way that consistently achieves changes in breast feeding duration. From one of the methodologically more robust studies, it seems that UNICEF/WHO Baby Friendly Hospital Initiative (BFI) training might have the potential to influence breast feeding duration. RECOMMENDATIONS FOR FURTHER RESEARCH: further testing of the BFI initiative within a controlled design. Future research into the education of health-care professionals that relates to the support of breast feeding women should have appropriate theoretical underpinning, describe educational programmes and the context of care delivery comprehensively and use standardised time points in the assessment of the effect of interventions. Intermediate outcomes should also be reported, including those related to the effect on education and practice.

Interventions in primary care to promote breastfeeding: an evidence review for the U.S. Preventive Services Task Force.
Chung M, Raman G, Trikalinos T, Lau J, Ip S.
BACKGROUND: Evidence suggests that breastfeeding decreases the risk for many diseases in mothers and infants. It is therefore important to evaluate the effectiveness of breastfeeding interventions. PURPOSE: To systematically review evidence for the effectiveness of primary care-initiated interventions to promote breastfeeding with respect to breastfeeding and child and maternal health outcomes. DATA SOURCES: Electronic searches of MEDLINE, the Cochrane Central Register of Controlled Trials, and CINAHL from September 2001 to February 2008 and references of selected articles, restricted to English-language publications. STUDY SELECTION: Randomized, controlled trials of primary care-initiated interventions to promote breastfeeding, mainly in developed countries. DATA EXTRACTION: Characteristics of interventions and comparators, study setting, study design, population characteristics, the proportion of infants continuing breastfeeding by different durations, and infant or maternal health outcomes were recorded. DATA SYNTHESIS: Thirty-eight randomized, controlled trials (36 in developed countries) met eligibility criteria. In random-effects meta-analyses, breastfeeding promotion interventions in developed countries resulted in significantly increased rates of short- (1 to 3 months) and long-term (6 to 8
months) exclusive breastfeeding (rate ratios, 1.28 [95% CI, 1.11 to 1.48] and 1.44 [CI, 1.13 to 1.84], respectively). In subgroup analyses, combining pre- and postnatal breastfeeding interventions had a larger effect on increasing breastfeeding durations than either pre- or postnatal interventions alone. Furthermore, breastfeeding interventions with a component of lay support (such as peer support or peer counseling) were more effective than usual care in increasing the short-term breastfeeding rate. LIMITATIONS: Meta-analyses were limited by clinical and methodological heterogeneity. Reliable estimates for the isolated effects of each component of multicomponent interventions could not be obtained. CONCLUSION: Evidence suggests that breastfeeding interventions are more effective than usual care in increasing short- and long-term breastfeeding rates. Combined pre- and postnatal interventions and inclusion of lay support in a multicomponent intervention may be beneficial.

Support for breastfeeding mothers: a systematic review.
Sikorski J, Renfrew MJ, Pindoria S, Wade A.
Department of General Practice and Primary Care, GKT School of Medicine, London, UK. jim.sikorski@kcl.ac.uk

Although the benefits of breastfeeding are widely accepted, the effectiveness of different strategies to promote the continuation of breastfeeding once initiated are less clear. The objective of this systematic review was to describe studies comparing standard care with the provision of extra breastfeeding support and to measure its effectiveness. Outcome measures used were rates of cessation of any breastfeeding or exclusive breastfeeding at chosen points in time. Measures of child morbidity and maternal satisfaction were also used when these were reported. Twenty eligible randomised or quasi-randomised controlled trials were identified, involving 23 712 mother-infant pairs. Extra support had a beneficial effect on the duration of any breastfeeding (RR [95% confidence intervals] for stopping any breastfeeding before the last study assessment up to 6 months 0.88 [0.81, 0.95]; 15 trials, 21 910 women). The effect was greater for exclusive breastfeeding (RR for stopping exclusive breastfeeding before the last study assessment 0.78 [0.69, 0.89]; 11 trials, 20 788 women). Although the point estimates of relative risk were very similar, benefit derived from professional support achieved statistical significance for any breastfeeding (RR 0.89 [0.81, 0.97]; 10 trials, 19 696 women) but not for exclusive breastfeeding (RR 0.90 [0.81, 1.01]; six trials, 18 258 women). Lay support was effective in reducing the cessation of exclusive breastfeeding (RR 0.66 [0.49, 0.89]; five trials, 2530 women) while the strength of its effect on any breastfeeding was less clear (RR 0.84 [0.69, 1.02]; five trials, 2224 women). Professional support in the largest trial to assess health outcomes produced a significant reduction in the risk of gastrointestinal infections and atopic eczema. In two trials with children suffering from diarrhoeal illness, extra support was highly effective in increasing short-term exclusive breastfeeding rates and reducing recurrence of diarrhoea. This review supports the conclusion that supplementary breastfeeding support should be provided as part of routine health service provision. There is clear evidence for the effectiveness of professional support on the duration of any breastfeeding although the strength of its effect on the rate of exclusive breastfeeding is uncertain. Lay support is effective in promoting exclusive breastfeeding although the strength of its effect on the duration of any breastfeeding is uncertain. Evidence supports the promotion of exclusive breastfeeding as central to the management of diarrhoeal illness in partially breast-fed infants.
Supporting breastfeeding mothers: qualitative synthesis.
McInnes RJ, Chambers JA.
NMAHP Research Unit, University of Stirling, UK. rjm2@stir.ac.uk
AIM: This paper is a report of a synthesis of mothers' and healthcare professionals' experiences and perceptions of breastfeeding support. BACKGROUND: Despite increasing knowledge, breastfeeding rates remain relatively static and mothers continue to report dissatisfaction with their experiences of breastfeeding. Greater understanding of breastfeeding may be achieved through rigorous qualitative research, and there has been a recent increase in such studies. DATA SOURCES: Electronic databases and citation lists of published papers were searched for articles listed between 1990 and 2005 and updated in May 2007. Studies were included if they used qualitative methods, were published in English, explored an aspect of breastfeeding and were based in a westernized country. REVIEW METHODS: Papers were included if they reported studies using qualitative methods to explore breastfeeding and were published in English and based in a westernized country. Each study was reviewed and assessed independently, key themes extracted and grouped, and secondary thematic analysis used to explore key concepts. RESULTS: From the 1990-2005 search, five themes emerged in health service support of breastfeeding: the mother-health professional relationship, skilled help, pressures of time, medicalization of breastfeeding and the ward as a public place. Social support had two themes: compatible and incompatible support. One additional theme emerged from the update to 2007: health professional relationships. CONCLUSION: Mothers tended to rate social support as more important than health service support. Health service support was described unfavourably with emphasis on time pressures, lack of availability of healthcare professionals or guidance, promotion of unhelpful practices and conflicting advice. Changes are required within the health services to address the needs of both mothers and staff.

Supporting breastfeeding mothers in hospital: part 1.
Wallis M, Harper M.
Great Ormond Street Hospital for Children NHS Trust, London.
Breastfeeding makes a vital contribution to the health and development of babies, as well as to long term health. Establishing breastfeeding may not be easy even for mothers with healthy full-term babies. Mothers in the paediatric environment experience additional challenges: sick babies, delayed onset of breastfeeding and having to establish and maintain breastfeeding in situations where privacy may be limited and anxiety levels high. This first part of a two-part article describes the development of a breastfeeding support service in a tertiary children's hospital. Institutional support, a dedicated post and a planned programme of training and education, with the development of specific resource materials, have resulted in a service that closely matches the expressed needs of mothers.
The role of social support in breastfeeding promotion: a literature review.  
Raj VK, Plichta SB.  
The current worldwide decline in the initiation and duration of breastfeeding has increased the need for effective breastfeeding promotion. Promotion policies and programs need to be sensitive to those factors that may help or hinder a mother in her efforts to breastfeed. Such factors include sociodemographic characteristics, maternal employment, and social support. Social support that increases breastfeeding includes emotional, tangible, and educational components from both informal social network members (male partner, mother, family/friends) and professional network members (health care professionals, lactation consultants). Conversely, negative social support may decrease breastfeeding.

The effectiveness of primary care-based interventions to promote breastfeeding: systematic evidence review and meta-analysis for the US Preventive Services Task Force.  
PURPOSE: We wanted to systematically review whether primary care-based interventions improve initiation and duration of breastfeeding. METHODS: Studies were found by searching MEDLINE (1966-2001), Health-STAR, the Cochrane Database of Systematic Reviews, the National Health Service Centre for Reviews and Dissemination Databases, and bibliographies of identified trials and review articles. Studies were included if they originated in the primary care setting and were conducted in a developed country, written in English, and contained a concurrent control group. RESULTS: Thirty randomized and nonrandomized controlled trials and 5 systematic reviews of breastfeeding counseling were included. Educational programs had the greatest effect of any single intervention on both initiation (difference 0.23; 95% confidence interval [CI], 0.12-0.34) and short-term duration (difference 0.39; 95% CI, 0.27-0.50). Support programs conducted by telephone, in person, or both increased short-term (difference 0.11; 95% CI, 0.03-0.19) and long-term duration (difference 0.08; 95% CI, 0.02-0.16). In contrast, written materials such as pamphlets did not significantly increase breastfeeding. Data were insufficient to determine whether the combination of education with support was more effective than education alone. CONCLUSIONS: Educational programs were the most effective single intervention. One woman would breast-feed for up to 3 months for every 3 to 5 women attending breastfeeding educational programs. Future research and policy should focus on translating these findings into more widespread practice in diverse primary care settings.
Optimizing successful breastfeeding in the newborn.
Cramton R, Zain-Ul-Abideen M, Whalen B.
PURPOSE OF REVIEW: The purpose of this article is to present an overview of the state of breastfeeding in the United States and to examine recent evidence for strategies aimed at optimizing successful breastfeeding in the neonatal period.
RECENT FINDINGS: Although rates of any and exclusive breastfeeding are rising, American mothers and infants are still unable to meet the Healthy People 2010 objectives. A review of the current literature demonstrates that the 'Ten Steps to Successful Breastfeeding' and the Baby Friendly Hospital Initiative are effective measures to increase breastfeeding initiation, duration, and exclusivity. A recent national survey reveals a significant proportion of pediatricians are not providing evidence-based recommendations for breastfeeding guidance and support. SUMMARY: The Baby Friendly Hospital Initiative, based upon the 'Ten Steps to Successful Breastfeeding', is an effective evidence-based model of perinatal care that protects, promotes, and supports breastfeeding. Pediatricians should aim to provide anticipatory guidance and management consistent with the 'Ten Steps' to optimize breastfeeding outcomes for mothers and their newborns.
# Search Results

## Table of Contents

1. PROFESSIONAL. Practice improvement, breastfeeding duration and health visitors. ........................................ page 3
2. The prevalence and determinants of breast-feeding initiation and duration in a sample of women in Ireland. ............................................................................................................................................................... page 3
3. The influence of fathers’ socioeconomic status and paternity leave on breastfeeding duration: a population-based cohort study. ........................................................................................................................................................................... page 3
4. Indices of Multiple Deprivation predict breastfeeding duration in England and Wales. ................................ page 3
5. Policy and public health recommendations to promote the initiation and duration of breast-feeding in developed country settings. ......................................................................................................................................................................................................................... page 4
6. Pacifiers and breastfeeding... Kronborg H, Vaeth M. How are effective breastfeeding technique and pacifier use related to breastfeeding problems and breastfeeding duration? Birth 2009;6(1):34-42. ............................................................. page 4
7. The relationship between baseline self-efficacy and breastfeeding duration. ......................................................... page 4
8. Variables associated with breastfeeding duration. .................................................................................................. page 5
9. How motivation influences breastfeeding duration among low-income women. ................................................. page 5
10. How are effective breastfeeding technique and pacifier use related to breastfeeding problems and breastfeeding duration? ............................................................................................................................................................................. page 6
11. Influence of sociodemographic and psychosocial characteristics on breastfeeding duration of mothers attending breastfeeding support groups. ............................................................................................................. page 6
12. Characteristics associated with longer breastfeeding duration: an analysis of a peer counseling support program. ..................................................................................................................................................................................................................... page 7
13. Exploring the influence of psychological factors on breastfeeding duration, phase 1: perceptions of mothers and clinicians. ............................................................................................................................................................................................................... page 7
14. A systematic review of education and evidence-based practice interventions with health professionals and breastfeeding counsellors on duration of breast feeding. ............................................................................................................ page 8
15. Effects of hospital policies and practices on initiation and duration of breastfeeding. ........................................ page 8
16. Effect of gestation on initiation and duration of breastfeeding. ....................................................................... page 8
17. Predictors of the duration of exclusive breastfeeding among first-time mothers. ........................................ page 9
18. The influence of psychological factors on breastfeeding duration. ................................................................. page 10
19. The influence of adolescent mothers’ breastfeeding confidence and attitudes on breastfeeding initiation and duration. ........................................................................................................................................................................................................ page 10
21. Learning on the job -- influences on the initiation and duration of breastfeeding. ............................................ page 11
22. Duration of breastfeeding in young women: psychological influences. ............................................................. page 11
23. Baby Friendly Hospital Initiative practices and breastfeeding duration in a cohort of first-time mothers in Adelaide, Australia. ........................................................................................................................................................................................................ page 12
24. Factors associated with the duration of exclusive breast-feeding in asthmatic families. .................................. page 12
25. Effects of socioeconomic status on breastfeeding duration in mothers of preterm and term infants. .......... page 13
26. Breast feeding self-efficacy and other determinants of the duration of breast feeding in a cohort of first-time mothers in Adelaide, Australia. ........................................................................................................................................................................................................ page 13
27. Effects of support on the initiation and duration of breastfeeding. ................................................................. page 14
28. Hospital practices that increase breastfeeding duration: results from a population-based study. ................ page 14
29. Optimal duration of exclusive breastfeeding: what is the evidence to support current recommendations? ..... page 14
30. The LATCH scoring system and prediction of breastfeeding duration. ............................................................. page 15
31. Randomized controlled trial to determine effects of prenatal breastfeeding workshop on maternal breastfeeding self-efficacy and breastfeeding duration. ................................................................................................................. page 15
32. A randomised-controlled trial in England of a postnatal midwifery intervention on breast-feeding duration. .................................................................................................................................................................................. page 16
33. Predictors of breastfeeding duration: evidence from a cohort study. ................................................................. page 16
34. Breastfeeding duration is determined by only a few factors. ............................................................................. page 17
35. An analysis of breastfeeding support and duration. ........................................................................................... page 17
36. Breastfeeding duration and perinatal cigarette smoking in a population-based cohort. ............................................ page 17
37. On-the-job moms: work and breastfeeding initiation and duration for a sample of low-income women. ....... page 18
38. Randomized, controlled trial of a prenatal and postnatal lactation consultant intervention on duration and intensity of breastfeeding up to 12 months. ............................................................................................................................................................................................ page 18
39. Do baby-friendly hospitals influence breastfeeding duration on a national level? ............................................ page 19
1. PROFESSIONAL. Practice improvement, breastfeeding duration and health visitors.

Citation: Community Practitioner, 01 September 2010, vol./is. 83/9(19-22), 14622815
Author(s): Spencer RL; Greatrex-White S; Fraser DM
Language: English
Abstract: The primary purpose of practice improvement is to improve clinical practice through changing the behaviour of healthcare professionals. Breastfeeding is a key public health issue, conferring benefits associated with both infant and maternal health, yet breastfeeding rates in the UK and Ireland are among the lowest in Western Europe. In this paper, the ways in which practice improvement can be utilised to enhance both efficiency and effectiveness are described, using a case study of the potential contribution of health visitors to increasing breastfeeding duration in primary care in order to illustrate this in clinical practice.

Publication Type: journal article
Source: CINAHL

2. The prevalence and determinants of breast-feeding initiation and duration in a sample of women in Ireland.

Citation: Public Health Nutrition, 01 June 2010, vol./is. 13/6(760-770), 13689800
Author(s): Tarrant RC; Younger KM; Sheridan-Pereira M; White MJ; Kearney JM
Language: English
Publication Type: journal article
Source: CINAHL

3. The influence of fathers' socioeconomic status and paternity leave on breastfeeding duration: a population-based cohort study.

Citation: Scandinavian Journal of Public Health, 01 June 2010, vol./is. 38/4(337-343), 14034948
Author(s): Flacking R; Dykes F; Ewald U
Language: English
Abstract: AIM: The propensity to breastfeed is a matter of public concern because of the favourable effects for infants. However, very few studies have described the influence of paternal variables upon duration of breastfeeding. The aim of this study was to describe the effects of fathers' socioeconomic status and their use of paternity leave on breastfeeding duration for infants up to 1 year of age. METHODS: A prospective population-based cohort study was undertaken. Data on breastfeeding, registered in databases in two Swedish counties for 1993-2001, were matched with data on socioeconomic status and paternity leave obtained from Statistics Sweden. Fathers of 51,671 infants were identified and included. RESULTS: Infants whose fathers had a lower level of education, were receiving unemployment benefit and/or had a lower equivalent disposable household income were significantly less likely to be breastfed at 2, 4, 6, 9, and 12 months of age. Infants whose fathers did not take paternity leave during the infant's first year were significantly less likely to be breastfed at 2 (p < 0.001), 4 (p < 0.001), and 6 months (p < 0.001). CONCLUSIONS: This paper shows that an enabling of an increased involvement from fathers during the infants' first year of life, such as by paid paternity leave, may have beneficial effects on breastfeeding up to 6 months of age. A more systematic approach to supporting fathers' involvement may be particularly valuable to those infants whose fathers have a lower socioeconomic status.

Publication Type: journal article
Source: CINAHL

4. Indices of Multiple Deprivation predict breastfeeding duration in England and Wales.

Citation: European Journal of Public Health, 01 April 2010, vol./is. 20/2(231-235), 11011262
BACKGROUND: To investigate the association between breastfeeding duration and socio-economic status as measured by the English and Welsh Indices of Multiple Deprivation (IMD).

METHODS: Total 216 multiparous women whose youngest or only child was between 6 and 24 months completed a retrospective questionnaire study of infant feeding between birth and 26 weeks. Measurements included breast-feeding history; socio-economic demography and IMD.

RESULTS: Breastfeeding duration was associated with levels of multiple deprivation in both English and Welsh samples. Deprivation level and breastfeeding duration were associated with traditional indicators of socio-economic status. When considered in combination with other socio-economic indicators of breastfeeding duration, the deprivation level remained a strong predictor of breastfeeding duration over and above other socio-economic measures.

CONCLUSIONS: Deprivation, as assessed by the IMD is predictive of breastfeeding duration. Postcode and thus deprivation level can be used as a non-intrusive way to identify women most at risk of low breastfeeding rates. Service provision can be targeted directly at women in areas recognized at being high in deprivation.

Publication Type: journal article
Source: CINAHL
Full Text: Available in fulltext at Highwire Press

5. Policy and public health recommendations to promote the initiation and duration of breast-feeding in developed country settings.

Citation: Public Health Nutrition, 01 January 2010, vol./is. 13/1(137-144), 13689800
Author(s): Dyson L; Renfrew MJ; McFadden A; McCormick F; Herbert G; Thomas J
Language: English
Publication Type: journal article
Source: CINAHL


Citation: Birth: Issues in Perinatal Care, 01 September 2009, vol./is. 36/3(267-267), 07307659
Author(s): Jenik A; Vain NE
Language: English
Publication Type: journal article
Source: CINAHL
Full Text: Available in fulltext at EBSCO Host

7. The relationship between baseline self-efficacy and breastfeeding duration.

Citation: Southern Online Journal of Nursing Research, 01 July 2009, vol./is. 9/4(0-7), 15380696
Author(s): Pollard D; Guill M
Language: English
Abstract: Background: Breastfeeding is recommended as the optimal feeding method for infants for the first 12 months of life (American Academy of Pediatrics, 1997). However, breastfeeding rates fall below the targets set by Healthy People 2010. One factor that plays a role in breastfeeding success and may be modifiable by nursing intervention is maternal self-efficacy. Purpose: To examine relationships among socio-demographic variables, maternal self-efficacy and the duration of breastfeeding. Theoretical Framework: Social Cognitive Learning Theory, Self-Efficacy. Design: Descriptive, correlational Sample and Setting: N = 70, southeastern North Carolina.
Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF) Results: Breastfeeding initiation rate of 69.5% and 36.7% at six months. Variables that correlated with breastfeeding duration were marital status, WIC enrollment, and in-hospital supplementation. Score on the Breastfeeding Self-Efficacy Scale was a statistically significant predictor of breastfeeding length. Reasons reported for early weaning were low milk supply, baby not satisfied, and a return to work. Implications: The Breastfeeding Self-Efficacy Scale (BSES-SF) can be used as a baseline assessment tool in the hospital at delivery to assist in identifying women who are at risk for early weaning. Further research is necessary to examine how certain interventions may help foster self-efficacy and thus breastfeeding duration.

**Publication Type:** journal article

**Source:** CINAHL

**Full Text:** Available in fulltext at EBSCO Host

### 8. Variables associated with breastfeeding duration.

**Citation:** JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 01 May 2009, vol./is. 38/3(259-268), 08842175

**Author(s):** Thulier D; Mercer J

**Language:** English

**Abstract:** Objective: To identify the variables associated with breastfeeding duration. Data Sources: The health science reference databases of CINAHL, PubMed, and the Cochrane Database of Systematic Reviews. Study Selection: Meta-analyses, Cochrane reviews, literature reviews, and quantitative and qualitative studies published in English from 1998 through 2008. Data Extraction: Data included all variables, both positive and negative, that were found to influence the outcome of breastfeeding duration. Data Synthesis: Demographic factors that influence breastfeeding duration are race, age, marital status, education, socioeconomics, and Special Supplemental Nutrition Program for Women, Infants, and Children status. Biological variables consisted of insufficient milk supply, infant health problems, maternal obesity, and the physical challenges of breastfeeding, maternal smoking, parity, and method of delivery. Social variables included paid work, family support, and professional support. Maternal intention, interest, and confidence in breastfeeding were psychological variables. Conclusion: Human lactation is a complex phenomena and the duration of breastfeeding is influenced by many demographic, physical, social, and psychological variables.

**Publication Type:** journal article

**Source:** CINAHL

**Full Text:** Available in fulltext at EBSCO Host


**Citation:** Journal of Human Lactation, 01 May 2009, vol./is. 25/2(173-181), 08903344

**Author(s):** Racine EF; Frick KD; Strobino D; Carpenter LM; Milligan R; Pugh LC

**Language:** English

**Abstract:** In-depth interviews were conducted with 44 low-income breastfeeding women to explore the incentives and disincentives to breastfeeding experienced within 6 months postpartum. Using an individual net benefit maximization (INBM) framework based on economic theory, we assessed women's motivations, incentives, and disincentives for breastfeeding. Based on the framework and their experience breastfeeding, women fell into 3 groups: intrinsically motivated, extrinsically motivated, and successfully experienced with both intrinsic and extrinsic motivation. Successfully experienced women were most likely to breastfeed to 6 months. Intrinsically motivated women valued breastfeeding but often required information and instruction to reach breastfeeding goals. Extrinsically motivated women were least likely to continue breastfeeding even with support and instruction. Providers can screen women to determine their experience and
motivation then tailor interventions accordingly. Intrinsically motivated women may need support and instruction, extrinsically motivated women may benefit from motivational interviewing, and successfully experienced women may need only minimal breastfeeding counseling. J Hum Lact. 25(2):173-181.

10. How are effective breastfeeding technique and pacifier use related to breastfeeding problems and breastfeeding duration?

Citation: Birth: Issues in Perinatal Care, 01 March 2009, vol./is. 36/1(34-42), 07307659
Author(s): Kronborg H; Væth M
Language: English
Abstract: BACKGROUND: Inconsistent findings leave uncertainty about the impact of pacifier use on effective breastfeeding technique. The purpose of this study was to investigate how breastfeeding technique and pacifier use were related to breastfeeding problems and duration of breastfeeding. METHODS: Data were collected from the intervention group of a randomized trial in which health visitors followed up with mothers for 6 months after childbirth. The health visitors classified the breastfeeding technique at approximately 1 week after birth and repeated the observation if a correction was necessary. Effective technique included positioning, latch, sucking, and milk transfer. Data on breastfeeding problems and pacifier use were obtained from self-reported questionnaires. The study population included 570 mother-baby pairs with complete information on breastfeeding technique and pacifier use. The primary outcome was duration of exclusive breastfeeding. RESULTS: One-half of the mothers showed ineffective breastfeeding technique at the first observation, most frequently ineffective position (61%) and latch (52%). In the unadjusted analysis, only sucking and milk transfer were associated with breastfeeding duration. In the adjusted analysis, ineffective technique was significantly associated with mothers reporting early breastfeeding problems, which thereby influenced the breastfeeding duration. Pacifier use had an independent negative impact on duration of breastfeeding. A single correction of the breastfeeding technique was not associated with duration or occurrence of problems. CONCLUSIONS: Observation of breastfeeding technique may help mothers in the stage of when they are establishing breastfeeding to avoid early and later problems, but breastfeeding technique is less useful in predicting breastfeeding duration. Use of a pacifier should be avoided in the first weeks after birth.

11. Influence of sociodemographic and psychosocial characteristics on breastfeeding duration of mothers attending breastfeeding support groups.

Citation: Journal of Perinatal Medicine, 01 March 2009, vol./is. 37/2(185-192), 03005577
Author(s): Bosnjak AP; Grguric J; Stanojevic M; Sonicki Z
Language: English
Abstract: Aim: Duration of breastfeeding, socio-demographic and psychosocial characteristics of the mothers attending breastfeeding support groups were investigated. Methods: All examined mothers were cared for according to the Baby Friendly Hospital Initiative (BFHI) of the World Health Organization (WHO) and UNICEF. The investigated group of mothers attended a breastfeeding support group (BSG) led by a community nurse and women experienced in breastfeeding without additional training. Data on breastfeeding duration were collected retrospectively by self-reported questionnaire. Results: Of 980 eligible, 393 mothers were included to the study: 210 attended BSG, while 183 did not. The following differences between the two groups were found: time when the decision to breastfeed was made, smoking during lactation and social support while breastfeeding. More mothers in the investigated group continued breastfeeding at least six months
postnatal (83.8% vs. 48.1%, P<0.001), with exclusive breastfeeding until the age of three months (56% vs. 23.5%, P<0.001). After logistic regression analysis, the following factors were found to be positively associated with the duration of breastfeeding for at least six months: time when the decision to breastfeed was made, intended duration of breastfeeding and household income. Maternal smoking during pregnancy affected duration of breastfeeding inversely. Conclusion: Characteristics which positively influenced the duration of breastfeeding are the time when the decision to breastfeed was made, intended duration of breastfeeding, household income, and smoking during pregnancy. Mothers who attended BSG more often continued breastfeeding for at least six months if they decided to breastfeed after birth, intended to breastfeed for longer than six months, had higher monthly household income and did not smoke during pregnancy.

Publication Type:
journal article

Source:
CINAHL


Citation:
Journal of Human Lactation, 01 February 2009, vol./is. 25/1(18-27), 08903344

Author(s):
Bolton TA; Chow T; Benton PA; Olson BH

Language:
English

Abstract:
Breastfeeding peer counseling support programs for low-income women have been implemented across the United States. Data from one such program were used to examine participant and program characteristics, of those enrolled prenatally (n = 2168) or postnatally (n = 2899), and to determine how these characteristics affected breastfeeding outcomes. Shorter breastfeeding duration was significantly predicted by introduction of formula on day 1 postpartum in participants enrolled prenatally (-37.9 days [95% CI: -57.9 to -17.9]) as well as postnatally (-49.1 days [95% CI: -63.4 to -34.8]). In both groups, increasing maternal age and previous breastfeeding experience were associated with significantly longer breastfeeding duration. Breastfeeding duration may be improved in programs by targeting younger mothers, those without breastfeeding experience, and focusing on delaying the introduction of formula. J Hum Lact. 25(1):18-27.

Publication Type:
journal article

Source:
CINAHL

13. Exploring the influence of psychological factors on breastfeeding duration, phase 1: perceptions of mothers and clinicians.

Citation:
Journal of Human Lactation, 01 February 2009, vol./is. 25/1(55-63), 08903344

Author(s):
O'Brien M; Buikstra E; Fallon T; Hegney D

Language:
English

Abstract:
Breastfeeding duration rates in Australia are low, prompting a search for modifiable factors capable of increasing the duration of breastfeeding. In this study, participants were asked which psychological factors they believed influence breastfeeding duration. Participants included 3 groups of mothers who had breastfed for varied lengths of time (n = 17), and 1 group of breastfeeding clinicians (n = 4). The nominal group technique was employed, involving a structured group meeting progressing through several steps. Analyses included collation of individual and group responses, group comparisons, and a thematic analysis of group discussions. Forty-five psychological factors thought to influence the duration of breastfeeding were identified. Factors considered most important included the mother's priorities and mothering self-efficacy, faith in breast milk, adaptability, stress, and breastfeeding self-efficacy. In addition to informing the design of phase 2 of this study, these results add to our knowledge of this emerging research area. J Hum Lact. 25(1):55-63.

Publication Type:
journal article

Source:
CINAHL

**Citation:** Midwifery, 01 February 2009, vol./is. 25/1(50-61), 02666138

**Author(s):** Spiby H; McCormick F; Wallace L; Renfrew MJ; D'Souza L; Dyson L

**Language:** English

**Abstract:**
OBJECTIVE: to examine the effects of training, education and practice change interventions with health professionals and lay breast feeding educator/counsellors on duration of breast feeding. REVIEW METHODS: this was part of a series of reviews of interventions that affect duration of breast feeding. Full details of methods used, including search strategy, are reported separately. SELECTION CRITERIA FOR INCLUDED STUDIES: randomised controlled trials, non randomised controlled trials with concurrent controls and before after studies (cohort or cross-sectional), undertaken in a developed country, published between 1980 and 2003 in any language. The primary outcome was duration of breast feeding. Secondary and process outcomes, including attitude, knowledge and behaviour change of participants, were included from papers that also reported breast feeding duration outcomes. STUDY-QUALITY ASSESSMENT: inclusion and exclusion criteria were applied, data extracted and study quality assessments made by one reviewer and independently checked by another, with a third reviewer to resolve differences, as recommended by the NHS Centre for Reviews and Dissemination's guidance for reviews. FINDINGS: the search identified nine papers. All were before after studies that included the education of health professionals; no studies were identified that related to breast feeding counsellors. In six of the studies, the participants were working with mothers and babies in hospitals (three in the UK, two in Italy and one in France); in three studies, the participants were working in community settings (Canada, Spain and the USA). Two UK studies and two non-UK studies (Spain and USA) involved mothers living in disadvantaged areas. Most interventions aimed to increase knowledge and change professional practice in support of breast feeding. KEY CONCLUSIONS: many of the studies reviewed have methodological limitations. Study settings and contexts vary and lack comparability. Evidence from these studies was insufficient to draw conclusions about overall benefit or harm associated with the interventions. From the studies identified, there seems to be no single way that consistently achieves changes in breast feeding duration. From one of the methodologically more robust studies, it seems that UNICEF/WHO Baby Friendly Hospital Initiative (BFI) training might have the potential to influence breast feeding duration. RECOMMENDATIONS FOR FURTHER RESEARCH: further testing of the BFI initiative within a controlled design. Future research into the education of health-care professionals that relates to the support of breast feeding women should have appropriate theoretical underpinning, describe educational programmes and the context of care delivery comprehensively and use standardised time points in the assessment of the effect of interventions. Intermediate outcomes should also be reported, including those related to the effect on education and practice.

**Publication Type:** journal article

**Source:** CINAHL

15. Effects of hospital policies and practices on initiation and duration of breastfeeding.

**Citation:** Child: Care, Health & Development, 01 January 2009, vol./is. 35/1(106-111), 03051862

**Author(s):** Manganaro R; Marseglia L; Mami C; Paolata A; Gargano R; Mondello M; Puliafito A; Gemelli M

**Language:** English

**Abstract:**
Background: The aim of this study was to verify if hospital policies and practices, independently of main maternal sociodemographic determinants, influence initiation and duration of breastfeeding. Methods: The study was carried out at the Immunization Centre of Messina where all infants born in the four maternity wards of Messina are vaccinated,
using a structured questionnaire, constructed in conformity with the methodology suggested by the WHO. Results: Data analysis, performed by non-parametric and multivariate analysis of variance and by Kaplan-Meier curves, showed that the highest probability rate (P < 0.001) of initiation and duration of breastfeeding, independently of maternal age, parity, education levels, smoke and work was found in infants born in a University Hospital, characterized by earlier times of first suckling, longer hospital stay and higher rate of exclusive breastfeeding at discharge. Conclusion: Our data emphasize the role and responsibility of hospital policies and practices in the promotion, and in the duration of breastfeeding.


Citation: Archives of Disease in Childhood -- Fetal & Neonatal Edition, 01 November 2008, vol./is. 93/6(0-), 13592998
Author(s): Donath SM; Amir LH
Language: English
Abstract: OBJECTIVE: The aim of this study was to investigate the effect of gestation on initiation and duration of breastfeeding in Australian infants. METHODS: The Longitudinal Study of Australian Children recruited a national sample of children born between March 2003 and February 2004 (n = 3600 in this multivariate sample). RESULTS: Breastfeeding initiation was lower for infants of 35-36 weeks' gestation (88.2%) than 37-39 weeks' gestation (92.0%) and > or =40 weeks' gestation (93.9%). At 6 months, 41.2% of infants 35-36 weeks' gestation were breastfeeding compared with 54.5% of 37-39 weeks' gestation infants and 60.5% of infants born > or =40 weeks. Compared with infants born > or =40 weeks, infants born at 35-36 weeks had an adjusted odds ratio (OR) of 0.51 (95% CI 0.34 to 0.76) and infants born at 37-39 weeks had an adjusted OR of 0.80 (95% CI 0.69 to 0.93) of breastfeeding at 6 months. CONCLUSION: Infants born before 40 weeks are at greater risk of being artificially fed than infants born > or =40 weeks.

17. Predictors of the duration of exclusive breastfeeding among first-time mothers.

Citation: Research in Nursing & Health, 01 October 2008, vol./is. 31/5(428-441), 01606891
Author(s): Semenic S; Loiselle C; Gottlieb L
Language: English
Abstract: Few women currently meet revised WHO recommendations to breastfeed exclusively for 6 months postpartum. In this prospective study we aimed to determine the influence of socio-demographic, psychosocial, and perinatal factors on the length of exclusive breastfeeding among 189 Canadian primiparous mothers. A majority of the participants did not meet their exclusive breastfeeding goals, and only 5% breastfed exclusively for a full 6 months. Breastfeeding self-efficacy, in-hospital formula supplementation, prenatal class attendance, and type of delivery independently predicted exclusive breastfeeding duration. Findings underscore the complex interplay of factors influencing breastfeeding, highlight the early postpartum weeks as a critical period for the establishment of exclusive breastfeeding, and suggest the need for a continuum of pre- and postnatal strategies for prolonging the exclusive breastfeeding period. © 2008 Wiley Periodicals, Inc. Res Nurs Health 31:428-441, 2008
18. The influence of psychological factors on breastfeeding duration.

Citation: Journal of Advanced Nursing, 15 August 2008, vol./is. 63/4(397-408), 03092402
Author(s): O'Brien M; Buikstra E; Hegney D
Language: English
Abstract: Aim. This paper reports on a study examining the relationship between women's psychological characteristics and breastfeeding duration, after controlling for sociodemographic factors.; Background. The literature suggests that psychological factors may influence breastfeeding behaviour, but studies are few. Existing evidence and the results of phase 1 of our study were used to construct a list of psychological factors, which were tested for their association with breastfeeding duration in the current design.; Method. Participants were postnatal inpatients in one of two regional hospitals between October and December 2005 and they completed the initial questionnaire within 14 days of giving birth (n = 375). Infant feeding method at 6 months and the timing of introduction of other food(s), where relevant, were ascertained by telephone interview.; Findings. Forty-four per cent of the sample showed signs of postnatal distress in the 14 days following the birth. Breastfeeding duration was statistically significantly associated with psychological factors including dispositional optimism, breastfeeding self-efficacy, faith in breastmilk, breastfeeding expectations, anxiety, planned duration of breastfeeding and the time of the infant feeding decision. As a set, these psychological factors were more predictive of breastfeeding duration than was the set of socio-demographic characteristics. The duration of any breastfeeding was uniquely predicted by faith in breastmilk, planned breastfeeding duration and breastfeeding self-efficacy.; Conclusion. This increased knowledge of the factors influencing breastfeeding will assist in identifying women at risk of early weaning and in constructing programmes capable of increasing the length of time for which women breastfeed.

Publication Type: journal article
Source: CINAHL
Full Text: Available in fulltext at EBSCO Host

19. The influence of adolescent mothers' breastfeeding confidence and attitudes on breastfeeding initiation and duration.

Citation: Journal of Human Lactation, 01 August 2008, vol./is. 24/3(268-277), 08903344
Author(s): Mossman M; Heaman M; Dennis C; Morris M
Language: English
Abstract: A prospective correlational study was conducted to examine the influence of adolescent mothers' breastfeeding attitudes and confidence on breastfeeding initiation and duration. A convenience sample of 100 pregnant adolescents who were contemplating breastfeeding completed the Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF) and the Breastfeeding Attitude Questionnaire (BAQ). The BSES-SF was readministered during the first week postpartum to those adolescents who initiated breastfeeding (n=84). Adolescents who were breastfeeding at the initial contact received a follow-up contact at 4 weeks postpartum. Comparisons were made between those adolescents who initiated breastfeeding (n=84) and those who did not (n=16). Significantly more mothers with higher prenatal attitude scores initiated breastfeeding. Mothers with higher prenatal breastfeeding attitude scores and higher prenatal and postnatal confidence scores were more likely to continue breastfeeding to 4 weeks postpartum. Health professionals are encouraged to develop strategies to enhance breastfeeding attitudes and confidence among adolescent mothers.

Publication Type: journal article
Source: CINAHL
Full Text: Available in fulltext at EBSCO Host

Citation: Journal of Paediatrics & Child Health, 01 June 2008, vol./is. 44/6(369-373), 10344810

Author(s): Akman I; Kuscu MK; Yurdakul Z; Ozdemir N; Solakoglu M; Orhon L; Karabekiroglu A; Ozek E

Language: English

Abstract: AIM: Depressive and anxiety symptoms are common in new mothers. The aim of this study is to explore the link between postpartum psychological adjustment and feeding preferences of the mothers. METHODS: Sixty mothers and newborns were enrolled in this prospective, longitudinal study. Maternal depressive symptoms were screened by the Edinburgh Postpartum Depression Scale (EPDS), and maternal anxiety level was assessed by the State-Trait Anxiety Inventory at 1 month postpartum. The Multidimensional Scale of Perceived Social Support was used for the assessment of maternal social support. The Adult Attachment Scale was used to determine the attachment style of the mother. Infants were examined and evaluated at 1 and 4 months of life. RESULTS: All mothers started breastfeeding their infants postpartum; 91% and 68.1% continued exclusive breastfeeding at 1 and 4 months, respectively. The first-month median EPDS score of mothers who breastfeed at the fourth month was statistically significantly lower than those who were not breastfeeding (6 and 12, respectively) (P = 0001). The first-month median EPDS score of mothers with secure attachment was lower than the median score of mothers with insecure attachment (5 and 9, respectively) (P < 0001). Exclusive breastfeeding rate was not statistically different among mothers with secure and insecure attachment styles. The median state and trait anxiety scores and social support scores of mothers were not different between groups according to breastfeeding status. CONCLUSIONS: This study has shown an association between higher EPDS scores and breastfeeding cessation by 4 months after delivery.

Publication Type: journal article
Source: CINAHL


Citation: MIDIRS Midwifery Digest, 01 June 2008, vol./is. 18/2(243-247), 09615555

Author(s): Dickens V

Language: English

Publication Type: journal article
Source: CINAHL

22. Duration of breastfeeding in young women: psychological influences.

Citation: British Journal of Midwifery, 01 March 2008, vol./is. 16/3(172-178), 09694900

Author(s): Bailey J; Clark M; Shepherd R

Language: English

Abstract: Breastfeeding rates for young mothers are lower than for older mothers and are poorer at four months than at initiation. Therefore the aim of this study was to discover which psychosocial factors influence breastfeeding duration and which factor-DS40 completed the following measures antenatally and postnatally: a self-esteem-scale, a parent expectations survey, a general self-efficacy scale (GSES), an attitudes to breastfeeding scale, a breastfeeding support scale and a breastfeeding self-efficacy scale (BSES). Duration of breastfeeding varied from 0 days to 4 months. There was a significant difference in attitudes between the age groups with the older women having more positive attitudes. Multiple hierarchical regression analysis showed that the GSES scores and the BSES scores significantly predicted duration independently of age. Breastfeeding self-efficacy decreased overall after giving birth and to a greater extent in younger
mothers who had significantly lower scores on postnatal breastfeeding self-efficacy, which perhaps accounts for younger mothers giving up breastfeeding sooner.

**Publications**

### 23. Baby Friendly Hospital Initiative practices and breast feeding duration in a cohort of first-time mothers in Adelaide, Australia.

**Citation:** Midwifery, 01 March 2008, vol./is. 24/1(55-61), 02666138  
**Author(s):** Pincombe J; Baghurst P; Antoniou G; Peat B; Henderson A; Reddin E  
**Language:** English  
**Abstract:** OBJECTIVE: to investigate the relationship between adherence to six of the Baby Friendly Hospital Initiative (BFHI) Ten steps to successful breast feeding and the duration of breast feeding in first-time mothers. DESIGN: a prospective study to assess the duration of breast feeding up to 6 months postpartum. Survival analysis techniques (Kaplan-Meier curves and Cox proportional hazard models) were used to interpret the data. PARTICIPANTS: 317 women who had given birth to their first baby (at term) in a large teaching maternity hospital in Adelaide, South Australia, during the period March to November 2003. FINDINGS: ignoring all other factors, we found that women whose babies received a bottle feed, used a pacifier or dummy, or who used a nipple shield during their postnatal stay, were at significantly greater risk of weaning (p<0.05). After adjusting for socio-demographic variables, self-efficacy, intended duration of breast feeding, and method of delivery, the results unexpectedly showed that the only significant predictor of early weaning was breast feeding on demand. However, a composite variable indicating use of one or more of nipple shields, a dummy or bottle feeds while in hospital resulted in a significantly greater risk of weaning (p=0.05). IMPLICATIONS FOR PRACTICE: socio-demographic and cultural factors may be more important determinants of the duration of breast feeding than some of the very specific hospital practices targeted in the Ten steps to successful breast feeding. From a public health perspective, we may influence the duration of breast feeding through better post-discharge support services, or through interventions that improve attitudes to breast feeding in specific socio-cultural and economic groups.

**Source:** CINAHL  
**Full Text:** Available in fulltext at EBSCO Host

### 24. Factors associated with the duration of exclusive breast-feeding in asthmatic families.

**Citation:** Health Education Research, 01 February 2008, vol./is. 23/1(158-169), 02681153  
**Author(s):** Gijsbers B; Mesters I; Knottnerus JA; van Schayck CP  
**Language:** English  
**Abstract:** This study was part of a randomized controlled trial in which verbal and written advice about exclusive breast-feeding for 6 months was provided to Dutch women expecting a child with a high risk of developing asthmatic traits. Eighty-nine women completed a theory-based self-report questionnaire between the third and sixth months of pregnancy, which served as the baseline measurement. The aim of this study was to examine the factors that influence the duration of exclusive breast-feeding. Cox multiple regression analysis showed a positive significant association between the duration of exclusive breast-feeding and the mother's breast-feeding knowledge (P < 0.01), her intended hours of work per week after maternity leave (P < 0.01) and her age (P <= 0.05). Short-term, that is <5 weeks, or no previous breast-feeding experience of multiparous women appeared to be negatively associated with the duration of breast-feeding (P < 0.001). Furthermore, women who received the educational programme were more likely to succeed in breast-feeding exclusively for 6 months than the control group (48% versus 27%, P < 0.05). This study suggests that extra educational support is beneficial, and especially necessary for multiparous women with an earlier short-term, <5 weeks, or no
breast-feeding experience, since they are at risk of discontinuing exclusive breast-feeding before completing the advisable 6-month period.

**25. Effects of socioeconomic status on breastfeeding duration in mothers of preterm and term infants.**

**Citation:** European Journal of Public Health, 01 December 2007, vol./is. 17/6(579-584), 11011262

**Author(s):** Flacking R; Nyqvist KH; Ewald U

**Abstract:** BACKGROUND: The propensity to breastfeed is not only of importance with regard to the beneficial effects on the individual, but is also of concern as an indicator of health behaviour related to social conditions. Thus, our aim was to investigate the impact of socioeconomic status (SES) on breastfeeding duration in mothers of preterm and term infants. METHODS: Prospective population based cohort study. Data for infants registered in breastfeeding databases of two Swedish counties 1993-2001 were matched with data from two national registries-the Medical Birth Registry and Statistics Sweden. A total of 37,343 mothers of 2093 preterm and 35,250 term infants participated. RESULTS: All socioeconomic factors; maternal educational level, maternal unemployment benefit, social welfare and equivalent disposable income, were strongly associated with breastfeeding when examined individually in mothers of preterm and term infants. Some of the associations attenuated when investigated simultaneously. Independently of SES and confounders, mothers of preterm infants were at higher risk of weaning before the infant was 2 months (adjusted odds ratio (OR) 1.70; 95% confidence interval [(CI) 1.46-1.99]), 4 months (OR 1.79; CI 1.60-2.01), 6 months (OR 1.48; CI 1.33-1.64), and 9 months old (OR 1.19; CI 1.06-1.34), compared with mothers of term infants. CONCLUSIONS: In Sweden, despite its social welfare support system and a positive breastfeeding tradition, SES clearly has an impact on the breastfeeding duration. Mothers of preterm infants breastfeed for a shorter time compared with mothers of term infants, even when adjustments are made for SES and confounders.

**Publication Type:** journal article
**Source:** CINAHL
**Full Text:** Available in fulltext at Highwire Press

**26. Breast feeding self-efficacy and other determinants of the duration of breast feeding in a cohort of first-time mothers in Adelaide, Australia.**

**Citation:** Midwifery, 01 December 2007, vol./is. 23/4(382-391), 02666138

**Author(s):** Baghurst P; Pincombe J; Peat B; Henderson A; Reddin E; Antoniou G

**Abstract:** OBJECTIVE: to assess the ability of a Breast-Feeding Self-Efficacy Scale (BSES) score measured at 1 week postpartum to predict the duration of breast-feeding in first-time mothers, and to develop a minimal set of potential confounders, including the BSES and demographic variables, for comparing the apparent effect of other influences on the duration of breast-feeding. DESIGN: a prospective cohort study, with primary outcome the duration of breast feeding up to 6 months postpartum. PARTICIPANTS: 317 women who had given birth to their first baby (at term) in a large teaching maternity hospital in Adelaide, South Australia, during the period March to November, 2003. FINDINGS: the BSES at 1 week postpartum was a strong predictor of the duration of breast-feeding in these first-time mothers. Its ability to predict the duration of breast-feeding was largely independent of the other factors (intended duration of breast-feeding, mother's level of education, country of birth, housing situation, smoking status and method of delivery), which were also found to be significant predictors of breast-feeding duration. IMPLICATIONS FOR PRACTICE: the BSES (including a new short form version) has
been confirmed by our study as an important instrument for identifying women at risk of early cessation of breast-feeding. Together with other demographic variables, it should be useful for targeting limited resources to those most in need.

**Publication Type:** journal article

**Source:** CINAHL

**27. Effects of support on the initiation and duration of breastfeeding.**

**Citation:** Western Journal of Nursing Research, 01 October 2007, vol./is. 29/6(708-723), 01939459

**Author(s):** Gill SL; Reifsnider E; Lucke JF

**Language:** English

**Abstract:** Researchers attempted to increase the initiation of breastfeeding and its duration to 6 months among a group of low-income, Hispanic women through an intervention program which included prenatal education and home based postpartum support. All participants were telephoned after delivery to determine infant feeding method. Duration of breastfeeding was determined by counting the number of days from initiation to the last day the baby was put to the breast. The Bayesian approach was used for the statistical analyses. In the intervention group, the propensity to initiate breastfeeding exceeded that of the control group. Results indicate the intervention group had twice (2.31) the odds of starting breastfeeding, twice (1.84-3.15) the odds of continuing to breastfeed for 6 months, and only half (.50-.54) the tendency to quit at any one time than did the control group.

**Publication Type:** journal article

**Source:** CINAHL

**28. Hospital practices that increase breastfeeding duration: results from a population-based study.**

**Citation:** Birth: Issues in Perinatal Care, 01 September 2007, vol./is. 34/3(202-211), 07307659

**Author(s):** Murray EK; Ricketts S; Dellaport J

**Language:** English

**Publication Type:** journal article

**Source:** CINAHL

**Full Text:** Available in fulltext at EBSCO Host

**29. Optimal duration of exclusive breastfeeding: what is the evidence to support current recommendations?**

**Citation:** American Journal of Clinical Nutrition, 01 February 2007, vol./is. 85/2(0-3), 00029165

**Author(s):** Fewtrell MS; Morgan JB; Duggan C; Gunnlaugsson G; Hibberd PL; Lucas A; Kleinman RE

**Language:** English

**Abstract:** Before 2001, the World Health Organization (WHO) recommended that infants be exclusively breastfed for 4-6 mo with the introduction of complementary foods (any fluid or food other than breast milk) thereafter. In 2001, after a systematic review and expert consultation, this advice was changed, and exclusive breastfeeding is now recommended for the first 6 mo of life. The systematic review commissioned by the WHO compared infant and maternal outcomes for exclusive breastfeeding for 3-4 mo versus 6 mo. That review concluded that infants exclusively breastfed for 6 mo experienced less morbidity from gastrointestinal infection and showed no deficits in growth but that large randomized trials are required to rule out small adverse effects on growth and the development of iron deficiency in susceptible infants. Others have raised concerns that the evidence is insufficient to confidently recommend exclusive breastfeeding for 6 mo for infants in developed countries, that breast milk may not meet the full energy requirements of the average infant at 6 mo of age, and that estimates of the proportion of exclusively breastfed infants at risk of specific nutritional deficiencies are not available. Additionally,
virtually no data are available to form evidence-based recommendations for the introduction of solids in formula-fed infants. Given increasing evidence that early nutrition and growth have effects on both short- and longer-term health, it is vital that this issue be investigated in high-quality randomized studies. Meanwhile, the consequences of the WHO recommendation should be monitored in different settings to assess compliance and record and act on adverse events. The policy should then be reviewed in the context of new data to formulate evidence-based recommendations. Copyright © 2007 American Society for Nutrition

30. The LATCH scoring system and prediction of breastfeeding duration.

Citation: Journal of Human Lactation, 01 November 2006, vol./is. 22/4(391-397), 08903344
Author(s): Kumar SP; Mooney R; Wieser LJ; Havstad S
Language: English
Abstract: This study aimed to determine whether LATCH scores assessed by professional staff during in-hospital stays are predictive of breastfeeding at 6 weeks. Participants were English-speaking breastfeeding women, 18 years or older, with healthy singletons. LATCH scores were obtained once every 8 hours on day 1 and daily subsequently until discharge. Data were obtained from hospital charts and telephone interviews on day 4 and week 6 postdelivery. At 6 weeks, 188 of 248 (76%) women were contacted and 66.5% were breastfeeding. LATCH scores were higher among women breastfeeding than those who had weaned. Using receiver operating characteristic (ROC) curves, a score of 9 or above at 16 to 24 hours was the most discriminate of the 5 time periods examined (area under the ROC curve = 0.72). Furthermore, women who met this criterion were 1.7 times more likely to be breastfeeding at 6 weeks than women with lower scores. The LATCH assessment tool is a modest predictor of breastfeeding duration.

31. Randomized controlled trial to determine effects of prenatal breastfeeding workshop on maternal breastfeeding self-efficacy and breastfeeding duration.

Citation: JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 01 September 2006, vol./is. 35/5(616-624), 08842175
Author(s): Noel-Weiss J; Rupp A; Cragg B; Bassett V; Woodend AK
Language: English
Abstract: Objective: To determine the effects of a prenatal breastfeeding workshop on maternal breastfeeding self-efficacy and breastfeeding duration. Design: Randomized controlled trial. Setting: Large tertiary hospital in Ontario, Canada. Participants: 110 primiparous women expecting a single child, an uncomplicated birth, and planning to breastfeed. Intervention: 2.5-hour prenatal breastfeeding workshop based on adult learning principles and self-efficacy theory. Main Outcome Measure: Maternal breastfeeding self-efficacy and the numbers of days and amount of breastfeeding were measured at four and eight weeks postpartum. Results/Data Analysis: Over time, maternal breastfeeding self-efficacy scores increased in both groups. Women who attended the workshop had higher self-efficacy scores and a higher proportion were exclusively breastfeeding compared to women who did not attend the workshop. There was little difference in the average number of days of breastfeeding, but the intervention group had less weaning. Conclusions: The workshop increased maternal breastfeeding self-efficacy and exclusive breastfeeding.

Citation: Midwifery, 01 September 2006, vol./is. 22/3(262-273), 02666138
Author(s): Wallace LM; Dunn OM; Alder EM; Inch S; Hills RK; Law SM
Language: English
Abstract: OBJECTIVE: To determine whether postnatal 'hands off' care by midwives on positioning and attachment of the newborn baby improves breast-feeding duration. DESIGN: Mothers were randomised at the first postnatal feed to receive either care by a midwife trained in the experimental protocol or by a control midwife undertaking routine care. SETTING: Eight wards in four English Midlands hospitals. PARTICIPANTS: 370 primiparous mothers with term babies who intended to breast feed, and could sit out of bed to do so. INTERVENTIONS: Experimental protocol of verbal-only advice on positioning and attachment, delivered at the first postnatal ward feed compared with routine care by a qualified midwife. MAIN OUTCOME MEASURES: Duration of breast feeding up to 17 weeks as assessed by diaries and interviews with mothers and protocol adherence from self-completed checklist by the midwife. The mothers' self-reported experience of care and support before, during and after delivery were assessed at 6 weeks, and feeding outcomes and employment status at 17 weeks. FINDINGS: Experimental group mothers more often held the baby across their lap and received 'hands off advice', but fewer babies in the experimental than control groups attached and fed: 59% (106/180) vs. 67% (118/175), p=0.1. No significant differences were found in the numbers of mothers breast feeding at 6 or 17 weeks in the experimental and control groups (stopped exclusive breast feeding: 76% (130/172) vs. 77% (126/163) at 6 weeks; 96% (167/174) vs. 96% (161/168) at 17 weeks; odds ratio 1.02, 95% CI 0.77 to 1.22; p=0.8; stopped any breast feeding: 35% (61/172) vs. 32% (53/167) at 6 weeks; 63% (109/173) vs. 60% (101/167) at 17 weeks; odds ratio 1.10, 0.84 to 1.45; p=0.5). There were no significant differences in the incidence of problems with breast feeding and care experienced by mothers before or during hospitalisation (other than at the first postnatal ward feed), nor after discharge home. CONCLUSIONS: No significant beneficial effect was found on breast-feeding duration of the verbal-only advice on positioning and attachment, perhaps because aspects of the intervention are already within routine UK practice. Other care practices at subsequent feeds may negate benefits of care at earlier feeds. 'Hands off' care at the first feed may be less important to subsequent feeding than achieving a first feed under supervision in the postnatal ward. IMPLICATIONS FOR PRACTICE: Midwives can be trained in a 4-hr workshop to achieve improved knowledge of 'hands off' positioning and attachment care, and these can be translated into clinical practice. Future studies should differentiate the elements of the care that are effective in achieving postnatal feeds, and apply this advice consistently at successive feeds.

Publication Type: journal article
Source: CINAHL

33. Predictors of breastfeeding duration: evidence from a cohort study.

Citation: Pediatrics, 02 April 2006, vol./is. 117/4(0-), 00314005
Author(s): Scott JA; Binns CW; Oddy WH; Graham KI
Language: English
Abstract: OBJECTIVE: To report the duration of breastfeeding among a population of Australian women and to identify factors that are associated with the duration of full breastfeeding to 6 months and any breastfeeding to 12 months. METHODS: Participants were 587 women who were recruited from 2 maternity hospitals in Perth and completed a baseline questionnaire just before or shortly after discharge from the hospital. Women were followed up by telephone interview at 4, 10, 16, 22, 32, 40, and 52 weeks postpartum. Data collected included sociodemographic, biomedical, hospital-related, and psychosocial factors associated with the initiation and the duration of breastfeeding. Cox's proportional hazards model was used to identify factors that were associated with the risk for
discontinuing full breastfeeding before 6 months and any breastfeeding before 12 months.

RESULTS: At 6 months of age, fewer than one half of infants were receiving any breast milk (45.9%), and only 12% were being fully breastfed. By 12 months, only 19.2% of infants were still receiving any breast milk. Breastfeeding duration was independently, positively associated with maternal infant feeding attitudes and negatively associated with breastfeeding difficulties in the first 4 weeks, maternal smoking, introduction of a pacifier, and early return to work. CONCLUSIONS: Relatively few women achieved the international recommendations for duration of full and overall breastfeeding. Women should receive anticipatory guidance while still in the hospital on how to prevent or manage common breastfeeding difficulties and should be discouraged from introducing a pacifier before 10 weeks, if at all. Improved maternity leave provisions and more flexible working conditions may help women to remain at home with their infants longer and/or to combine successfully breastfeeding with employment outside the home.

Publication Type: journal article
Source: CINAHL
Full Text: Available in fulltext at Highwire Press

34. Breastfeeding duration is determined by only a few factors.

Citation: European Journal of Public Health, 01 April 2006, vol./is. 16/2(162-167), 11011262
Author(s): Peters E; Wehkamp KH; Felberbaum RE; Krüger D; Linder R
Language: English
Publication Type: journal article
Source: CINAHL
Full Text: Available in fulltext at Highwire Press

35. An analysis of breastfeeding support and duration.

Citation: Communicating Nursing Research, 01 March 2006, vol./is. 39/(307-307), 01601652
Author(s): Moya D; Dufault E; Monarez-Perez N; Schaefer-Kelly A
Language: English
Publication Type: journal article
Source: CINAHL

36. Breastfeeding duration and perinatal cigarette smoking in a population-based cohort.

Citation: American Journal of Public Health, 01 February 2006, vol./is. 96/2(309-314), 00900036
Author(s): Liu J; Rosenberg KD; Sandoval AP
Language: English
Abstract: Objectives. We examined the association between breastfeeding duration and maternal smoking before, during, and after pregnancy.; Methods. Data from the 2000-2001 Oregon Pregnancy Risk Assessment Monitoring System were used. Early weaning was defined as not breastfeeding at 10 weeks postpartum.; Results. At 10 weeks after pregnancy, 25.7% of mothers who initiated breastfeeding no longer breastfed. After controlling for confounders, quitters (mothers who quit smoking during pregnancy and maintained quit status after pregnancy) and postpartum relapers (mothers who quit smoking during pregnancy and resumed smoking after delivery) did not have significantly higher risk for early weaning than nonsmokers. However, persistent smokers (mothers who smoked before, during, and after pregnancy) were 2.18 times more likely not to breastfeed at 10 weeks (95% confidence interval=1.52, 2.97). Women who smoked10 or more cigarettes per day postpartum (i.e., heavy postpartum relapers and heavy persistent smokers) were 2.3-2.4 times more likely to wean their infants before 10 weeks than were nonsmokers.; Conclusions. Maternal smoking is associated with early weaning. Stopping smoking...
during pregnancy and decreasing the number of cigarettes smoked postpartum may increase breastfeeding duration.

**37. On-the-job moms: work and breastfeeding initiation and duration for a sample of low-income women.**

**Citation:** Maternal & Child Health Journal, 01 January 2006, vol./is. 10/1(19-26), 10927875

**Author(s):** Kimbro RT

**Language:** English

**Abstract:** Objectives: As both employed and breastfeeding mothers increase, more women are facing the decision of whether and how to combine the behaviors. This paper examines three hypotheses for a sample of low-income women: 1) Mothers who expect to return to work after the birth of their baby will be less likely to initiate breastfeeding; 2) The timing of the return to work and quitting breastfeeding will coincide; 3) Mothers in professional jobs and Stay-at-Home (SAH) Moms will breastfeed for longer durations than mothers with other types of jobs. Methods: The Fragile Families and Child Wellbeing Study, a sample of mostly low-income, unmarried U.S. mothers, offers a unique opportunity to study this issue, as there is reason to believe that employment may impact breastfeeding differently for low-income women. Logistic regression determines the relationship between the expectation of work and breastfeeding initiation, and discrete-time logit models examine breastfeeding duration, the timing of the return to work, and occupation type. Results: Expecting to work in the year after the baby's birth does not impact breastfeeding initiation. The timing of quitting breastfeeding and the return to work are closely and powerfully linked, and mothers in administrative and manual positions quit earlier than other women. Interestingly, women in service occupations do not differ in breastfeeding duration from SAH mothers or professionals. Conclusions: This research demonstrates that low-income women are having difficulty combining work and breastfeeding, which has important health implications for their infants, and that women working in administrative and manual occupations may face special constraints.
intensity at 13 and 52 weeks, based on self-reports of weekly feeding, on a 7-level scale.

RESULTS: The intervention group was more likely to breastfeed through week 20 (53.0% vs 39.3%). Exclusive breastfeeding rates were low and did not differ according to group. In multivariate analyses, control subjects had lower breastfeeding intensity at 13 weeks (odds ratio [OR]: 1.90; 95% confidence interval [CI]: 1.13-3.20) and 52 weeks (OR: 2.50; 95% CI: 1.48-4.21). US-born control subjects had lowest breastfeeding intensity at 13 weeks (OR: 5.22; 95% CI: 2.43-11.22) and 52 weeks (OR: 5.25; 95% CI: 2.44-11.29). There were no significant differences in breastfeeding intensity among the US-born intervention, foreign-born intervention, and foreign-born control groups.

CONCLUSIONS: This "best-practices" intervention was effective in increasing breastfeeding duration and intensity. Breastfeeding promotion should focus on US-born women and exclusive breastfeeding.

Publication Type: journal article
Source: CINAHL
Full Text: Available in fulltext at Highwire Press

39. Do baby-friendly hospitals influence breastfeeding duration on a national level?

Citation: Pediatrics, 02 November 2005, vol./is. 116/5(0-), 00314005
Author(s): Merten S; Dratva J; Ackermann-Liebrich U
Language: English

OBJECTIVES: In Switzerland, the Baby-Friendly Hospital Initiative (BFHI) proposed by the United Nations Children's Fund (UNICEF) was introduced in 1993 to promote breastfeeding nationwide. This study reports results of a national study of the prevalence and duration of breastfeeding in 2003 throughout Switzerland and analyzes the influence of compliance with UNICEF guidelines of the hospital where delivery took place on breastfeeding duration. METHODS: Between April and September 2003, a random sample of mothers who had given birth in the past 9 months in Switzerland received a questionnaire on breastfeeding and complementary feeding. Seventy-four percent of the contacted mothers (n = 3032) participated; they completed a 24-hour dietary recall questionnaire and reported the age at first introduction of various foods and drinks. After excluding questionnaires with missing information relevant for the analyses, we analyzed data for 2861 infants 0 to 11 months of age, born in 145 different health facilities. Because it was known whether each child was born in a designated baby-friendly hospital (45 hospitals) or in a health facility in the process of being evaluated for BFHI inclusion (31 facilities), we were able to assess a possible influence of the BFHI on breastfeeding success. For this purpose, we merged individual data with hospital data on compliance with the UNICEF guidelines, from a data source collected on an annual basis for quality monitoring of designated baby-friendly hospitals and health facilities in the evaluation process. Information on actual compliance with the guidelines allowed us to investigate the relationship between breastfeeding outcomes and compliance with UNICEF guidelines. We were also able to compare the breastfeeding results with those for non-baby-friendly health facilities. The comparison was based on median durations of exclusive, full, and any breastfeeding calculated for each group. To allow for other known influencing factors, we calculated adjusted hazard ratios by using Cox regression; we also conducted logistic regression analyses with the 24-hour dietary recall data, to calculate adjusted odds ratios for validation of results from the retrospectively collected data.

RESULTS: In 2003, the median duration of any breastfeeding was 31 weeks at the national level, compared with 22 weeks in 1994, and the median duration of full breastfeeding was 17 weeks, compared with 15 weeks in 1994. The proportion of exclusively breastfed infants 0 to 5 months of age was 42% for infants born in baby-friendly hospitals, compared with 34% for infants born elsewhere. Breastfeeding duration for infants born in baby-friendly hospitals, compared with infants born in other hospitals, was longer if the hospital showed good compliance with the UNICEF guidelines (35 weeks vs 29 weeks for any breastfeeding, 20 weeks vs 17 weeks for full breastfeeding, and 12 weeks vs 6 weeks for exclusive breastfeeding). To control for differences in the study population between the different types of health facilities, hazard and odds ratios were calculated as described above, taking into account socioeconomic
and medical factors. Although the analysis of the retrospective data showed clearly that the duration of exclusive and full breastfeeding was significantly longer if delivery occurred in a baby-friendly hospital with high compliance with the UNICEF guidelines, whereas this effect was less prominent in other baby-friendly health facilities, this difference was less obvious in the 24-hour recall data. Only for the duration of any breastfeeding could a positive effect be seen if delivery occurred in a baby-friendly hospital with high compliance with the UNICEF guidelines. Known factors involved in the evaluation of baby-friendly hospitals showed the expected influence, on the individual level, on duration of exclusive, full, and any breastfeeding. If a child had been exclusively breastfed in the hospital, the median duration of exclusive, full, and any breastfeeding was considerably longer than the mean for the entire population or for those who had received water-based liquids or supplements in the hospital. A positive effect on breastfeeding duration could be shown for full rooming in, first suckling within 1 hour, breastfeeding on demand, and also the much-debated practice of pacifier use. After controlling for medical problems before, during, and after delivery, type of delivery, well-being of the mother, maternal smoking, maternal BMI, nationality, education, work, and income, all of the factors were still significantly associated with the duration of full, exclusive, or any breastfeeding. CONCLUSIONS: Our results support the hypothesis that the general increase in breastfeeding in Switzerland since 1994 can be interpreted in part as a consequence of an increasing number of baby-friendly health facilities, whose clients breastfeed longer. Nevertheless, several alternative explanations for the longer breastfeeding duration for deliveries that occurred in baby-friendly hospitals can be discussed. In Switzerland, baby-friendly hospitals actively use their certification by UNICEF as a promotional asset. It is thus possible that differences in breastfeeding duration are attributable to the fact that mothers who intend to breastfeed longer would choose to give birth in a baby-friendly hospital and these mothers would be more willing to comply with the recommendations of the UNICEF guidelines. Even if this were the case, however, this selection bias would not explain the differences in breastfeeding duration between designated baby-friendly health facilities with higher compliance with the UNICEF guidelines and those with lower compliance. Especially this last point strongly supports a beneficial effect of the BFHI, because mothers do not know how well hospitals comply with the UNICEF program. The fact that breastfeeding rates have generally improved even in non-baby-friendly health facilities may be indirectly influenced by the BFHI; its publicity and training programs for health professionals have raised public awareness of the benefits of breastfeeding, and the number of professional lactation counselors has increased continuously. Breastfeeding prevalence and duration in Switzerland have improved in the past 10 years. Children born in a baby-friendly health facility are more likely to be breastfed for a longer time, particularly if the hospital shows high compliance with UNICEF guidelines. Therefore, the BFHI should be continued but should be extended to include monitoring for compliance, to promote the full effect of the BFHI.

Publication Type: journal article
Source: CINAHL
Full Text: Available in fulltext at Highwire Press
1 Background information

Quick info:
Scope:
• establishing breastfeeding for healthy full-term infants, including:
  • techniques
  • advantages
  • contraindications
  • complications
  • management of breastfeeding problems
  • alternatives to breastfeeding
  • parent support and education, follow-up healthcare visits
• weaning – when to start, and how to reduce breastfeeds at an appropriate age

Out of scope:
• breastfeeding options in females with contraindications, such as HIV
• breastfeeding on neonatal units
• contraception and breastfeeding
• the clinical assessment and treatment of infective mastitis and breast abscess

Definitions:
• ‘exclusively breastfeeding’ is defined as an infant’s consumption of human milk with no supplementation of any type, except vitamins, minerals, and medications
• breast milk contains all the fluid and nutrients necessary for the first 6 months of life (even in hot climates, additional water is not necessary)
• an infant is described as ‘predominantly breastfed’ if the infant does not receive breast milk substitutes or solid food, but receives in addition to breast milk:
  • water
  • water based drinks
  • fruit juice

Incidence and prevalence:
• in England (2005):
  • approximately 78% of mothers initiate breastfeeding [1]
  • approximately 66% of mothers continue breastfeeding after the first week [1]
  • approximately 50% of mothers breastfeed for 6 weeks [1]
  • approximately 26% of mothers breastfeed for 6 months [1]
  • the rate of exclusive breastfeeding at 6 months in the UK is less than 2% [1]
• worldwide:
  • less than 50% of all infants are exclusively breastfed for up to 4 months [2]

References:

2 Information resources for patients and carers

Quick info:
Patients and carers in England and Wales can access this pathway through NHS Choices at http://healthguides.mapofmedicine.com/choices/map/breastfeeding_1.html

The following resources have been produced by organisations certified by The Information Standard:
• ‘Breastfeeding – information, symptoms and treatments’ (URL) from Bupa at http://www.bupa.co.uk/
• ‘Breastfeeding – questions and answers’ (URL) from Bupa at http://www.bupa.co.uk/
• ‘Breastfeeding – the benefits’ (PDF) from Patient UK at http://www.patient.co.uk/
Breastfeeding

- 'Division of ankyloglossia (tongue-tie) for breastfeeding' (PDF) from National Institute for Health and Clinical Excellence (NICE) at http://www.nice.org.uk/

The following resources have been written or recommended by national policy bodies or guideline producers whose content has informed this pathway:
- 'Breastfeeding' patient leaflet (URL) from Clinical Knowledge Summaries (CKS) at http://www.cks.nhs.uk/
- 'Caring for someone' (URL) from Directgov at http://www.direct.gov.uk/
- 'Disabled people' (URL) from Directgov at http://www.direct.gov.uk/

Patient stories describing their care journeys are available at 'Healthtalkonline' (URL) from DIPEx at http://www.healthtalkonline.org/
Explanations of clinical laboratory tests used in diagnosis and treatment are available at 'Understanding Your Tests' (URL) from Lab Tests Online-UK at http://www.labtestsonline.org.uk/.

The Map of Medicine is committed to providing high quality health and social care information for patients and carers. For details on how these resources are identified, please see 'Map of Medicine Patient and Carer Information'.

NB: This information appears on each page of this pathway.

3 Updates to this pathway

Quick info:
Date of publication: 30-Jul-2010

Three nodes now appear at the top of each pathway page. These provide:
- easy access to scope and background information on each page of the pathway whilst reducing repetition between nodes
- easy access to patient resources/leaflets
- information on pathway updates

The pathway has been updated in line with the following guidelines:

Further information was provided by the following references: [3,4,6-11]. For further information, please see the pathway's Provenance certificate.

Practice-based knowledge has been contributed to this pathway by:
- Selected members of Map of Medicine (MoM) Clinical Editorial team, and independent reviewers invited by MoM

The pathway has been completely restructured and redrafted in line with the Map of Medicine editorial methodology and to bring it in line with current clinical practice.

NB: This information appears on each page of this pathway.

4 Provide a supportive environment for breastfeeding

Quick info:
Support for breastfeeding:
- breastfeeding support should be made available regardless of the location of care [5]
- prioritise sufficient time to give support to a woman and baby during initiation and continuation of breastfeeding [5]
- enthusiastic support and involvement of pediatrician in the promotion and practice of breastfeeding is essential to the achievement of optimal infant and child health, growth, and development [2]
- education of both parents before and after delivery of the infant is essential for successful breastfeeding [2]
- promote breastfeeding as a cultural norm and encourage family and societal support for breastfeeding [2]
- support and encouragement by the father can greatly assist the mother during the initiation process and during subsequent periods when problems arise [2]
- where possible, while being consistent with appropriate care for the mother, minimize or modify the course of maternal medications that have the potential for altering the infant’s alertness and feeding behaviour [2]

Health promotion interventions to promote and support breastfeeding have been found to increase the rates of initiation, duration, and exclusivity of breastfeeding [3,4]:
- consider multiple strategies, including:
  - formal breastfeeding education for mothers and families [3,4]:
    - one-to-one health education can be effective at increasing initiation rates among women on low incomes [4]
  - direct support of mothers during breastfeeding [3,4]
Breastfeeding

• training of primary care staff about breastfeeding and techniques for breastfeeding support [3,4]
• peer support programmes [3,4]
• health sector initiatives (HSI) [3,4]

* HSI – Baby Friendly Hospital Initiative (BFHI) [1,3-5]:
  • promotes, protects, and supports breastfeeding through 'The Ten Steps to Successful Breastfeeding for Hospitals' [3]
  • interventions that include both prenatal and postnatal components may be most effective at increasing breastfeeding [3,4]

References:

5 Health sector initiatives (HSI)

Quick info:
The National Institute for Health and Clinical Excellence (NICE) recommends all healthcare providers (hospitals and community) should implement an externally-evaluated structured programme that encourages breastfeeding, using the Baby Friendly Initiative (BFI) as a minimum standard [5]:

• institutional changes in hospital practices to promote breastfeeding are effective at increasing both the initiation and duration of breastfeeding, particularly in developing countries [4,5]
• these may include stand-alone interventions or a package of interventions [5]
• collaboration among a network of clinicians, children’s services professionals and community partners that is as wide as possible is key to improving breastfeeding prevalence for all mothers [1]:
  • clinical partners include [1,2]:
    • midwives working in hospital and community settings, heads of midwifery and maternity services liaison committees [1]
    • health visitors [1,2]
    • specialist practitioners (eg teenage pregnancy midwives) [1,2]
    • Family Nurse Partnership practitioners [1]
    • clinical nurse specialists and school nurses [1,2]
    • GPs and practice-based commissioning groups [1,2]
    • dentists, dieticians, pharmacist [1,2]
    • obstetricians, paediatricians, A&E staff, and neonatal staff [1,2]
    • directors of public health and public health professionals working in maternity and early years settings [1,2]
    • Children’s Trust and wider community [1]
  • combined interventions and inclusion of lay support in a multicomponent intervention may be beneficial [3-5]

References:

6 Peer support

Quick info:
There is a beneficial effect on the initiation and duration of any breastfeeding with all forms of extra support:

• peer support is an effective intervention, particularly when delivered to women in low-income groups, to increase initiation and duration rates among women who expressed a wish to breastfeed [1,5]
• easily accessible breastfeeding peer support programmes, where peer supporters are part of a multidisciplinary team (MDT), are recommended [1,5]
Breastfeeding

- training, supervision, and childcare for volunteer peer supporters may enhance the service on wards and at groups [1]
- peer support is provided by peers within the community who have breastfed successfully themselves and have undergone some training on breastfeeding [4]
- peer supporters should [1]:
  - be able to consult a health professional for support
  - contact new mothers within 48 hours of their transfer home (or of a home birth) in addition to existing health professional visits
  - offer ongoing support according to the mother's individual needs – either face-to-face, via telephone, or through groups

References:

7 Advantages of breastfeeding

Quick info:
Advantages of breastfeeding for the infant include:
- optimised physical development [2,3,5,6]
- enhanced benefits from immunisations through an increased active immune response [4]
- decreased incidence and risk of diseases in the infant, including:
  - severe lower respiratory tract infections [2,3,5,6]
  - non-specific gastroenteritis [2,3,5,6]
  - diarrhoea [2,3,5,6]
  - bacterial meningitis [2,3,5,6]
  - bacteraemia [2,3,5,6]
  - urinary tract infection (UTI) [2,3,5,6]
  - acute otitis media [2,3,5,6]
  - childhood leukaemia [2,3,5,6]
  - atopic dermatitis (AD) [3,5,6]:
    - there is conflicting evidence on whether breastfeeding for 3 months has a protective effect for children including those with a family history of AD [7]
  - asthma [2,3,5,6]
  - allergic rhinitis [2,3,5,6]
  - paediatric type 1 and 2 diabetes [2,3,5,6]
  - necrotising enterocolitis [2]
  - lymphoma [2]
  - Hodgkin's disease [2]
  - obesity [2]
- reduced neonatal mortality – associated with the reduction of sudden infant death syndrome [2,3,5,6]
- stable neonatal blood sugar levels [5]
- increased bowel movements [5]

Maternal advantages include:
- decreased postpartum bleeding [2,3,6]
- amenorrhoea or decreased menstrual blood loss [2,3,6]
- more rapid uterine involution (due to oxytocin release) [2,3,6]
- a decreased risk of maternal postnatal depression [2,3,6]
- a decreased risk of maternal breast, uterine, or ovarian cancer [2,3,6]
- quicker return to pre-pregnancy weight [2,3,6]
- decrease in osteoporosis or bone fracture [2,3,6]
- a positive association between parenting capability and breastfeeding particularly among single and low-income mothers [1]

References:
Breastfeeding

8 Potential obstacles to breastfeeding

Quick info:

Obstacles to initiation of breastfeeding which may require specialised or individualised approach to feeding include:

- delivery by caesarean section [5]:
  - these women are less likely to commence breastfeeding, but no more likely to discontinue breastfeeding than women who have a vaginal birth
- general anaesthetic given to women during labour [5]
- cracked or painful nipples [5]
- bacterial or fungal infection [5], eg mammary candidosis
- oral abnormalities in the infant, eg cleft lip or palate, ankyloglossia (tongue-tie) [5]
- breast surgery, trauma, or abnormality [5]:
  - nipple inversion is not usually a problem when there is good support and information from healthcare professionals
- acute or chronic disease in mother or infant [8]
- previous breastfeeding difficulties [8]
- babies born to mothers with diabetes [8]
- neuromotor problems in the infant, eg Down's syndrome [8]
- use of certain medications [2]
- cultural attitudes to breastfeeding [5]
- insufficient prenatal education about breastfeeding [2]
- disruptive maternity care practices [2,3]
- lack of support and information from healthcare professionals [2,3]
- an environment that does not enable the mother's right to breastfeed her baby in public [2,4]
- lack of family or community support [2,3]
- maternal employment obligations [3]
- media portrayal of bottle feeding as normal and promotion of formula milk [2]
- legal considerations such as laws regarding children in the workplace [2]
- depressive symptoms [9]:
  - women with antenatal depressive symptoms are less likely to attempt breastfeeding
  - women in the perinatal period with postpartum depression (PPD) may be at increased risk for poorer infant feeding outcomes including decreased breastfeeding initiation
  - these women may also worry more about breastfeeding, report increased breastfeeding difficulties, and express more dissatisfaction with feeding techniques

References:

9 Contraindications to breastfeeding

Quick info:
Advise the mother not to breastfeed if:

- she is HIV positive (HIV can be transmitted through breast milk) [2]:
  - note that maternal HIV status is not an absolute contraindication to breastfeeding in all countries:
  - the risk of HIV transmission with breastfeeding must be weighed against the possibility of malnutrition, infection, and death associated with bottle/formula feeding, particularly in countries where access to clean water and health education is limited
  - a study has shown exclusive breastfeeding for the first 3-6 months carried a significantly lower risk of HIV-1 transmission than mixed feeding, and a similar risk to no breastfeeding [4]
- she has active herpes simplex or varicella zoster lesions on a breast (infant may feed from the other breast if clear of lesions) [2]:
  - if mother has lesions anywhere else on her body (oral or genital herpes simplex or lesions on the trunk), advise her to take strict hygiene precautions when handling and feeding the infant
- she is human T cell lymphotropic virus (HTLV) type I or II positive [8]
- maternal sputum is positive for tuberculosis (TB) causing bacteria [9]:
  - consider temporarily stopping breastfeeding until both mother and infant have been treated for TB infection
- isoniazid, rifampicin, ethambutol, streptomycin can be safely taken while breastfeeding
- the mother’s expressed milk can be given to her baby, as TB causing bacilli are not transmitted in breast milk
- the mother will still be contagious (via airborne transmission) for at least 2 weeks after starting medication therapy
- breastfeeding can be started again when the mother’s sputum is negative (about 2 weeks after starting treatment)
- the infant has:
  - classic galactosaemia [2]:
    - caused by a congenital metabolic enzyme deficiency
    - the infant is unable to metabolise galactose
  - phenylketonuria [8]:
    - caused by a rare metabolic disorder
    - results in accumulation of the amino acid phenylalanine in the blood, which can interfere with normal brain development
    - seek expert paediatric and dietary advice
    - partial breastfeeding is possible with supplementation using a low phenylalanine formula

Advise mothers to avoid:

- alcohol [2]:
  - becomes concentrated in breast milk and its use can inhibit milk production
  - an occasional single, small alcoholic drink is acceptable but advise mothers to avoid breastfeeding for 2 hours after any alcoholic drink
- tobacco smoking [2]:
  - mothers should avoid smoking within the home
  - advise mothers to make every effort to wean themselves from tobacco as rapidly as possible

Seek further advice on suitability of breastfeeding if the mother:

- is receiving radioactive isotopes (not all isotopes are necessarily a contraindication to breastfeeding) or has had exposure to radioactive materials [2]
- is taking certain medications, including:
  - antimetabolites [2]
  - chemotherapeutic agents [2]
  - certain herbal remedies, eg ginseng [2]
  - certain medications used for treating mental health disorders including postpartum depression (PPD), eg lithium, citalopram, fluoxetine, clozapine [10]
  - breastfed babies with mothers taking serotonin reuptake inhibitors (SSRIs) for PPD should be closely monitored in order to detect any iatrogenic event as soon as possible [10]
  - has a history of substance misuse, such as amphetamines, heroin, cocaine, or marijuana – these are harmful to the health of the infant [2]:
    - note that if the substance is not found in the bloodstream, the breast milk is also generally clear of the substance

Breastfeeding is not contraindicated if the mother [2]:

- has a fever
- is taking antibiotics or analgesics
- has a breast abscess, breast swelling, or breast pain [2,5]
- is hepatitis B surface antigen-positive
- is infected with hepatitis C virus
- is febrile (unless the cause is a contraindication above)
- has been exposed to low-level environmental chemical agents
- is a seropositive carrier of cytomegalovirus (CMV):
  - decisions about breastfeeding of very low birth weight infants (birth weight under 1500g) by mothers known to be CMV-seropositive should be made with consideration of the potential benefits of human milk versus the risk of CMV transmission
  - freezing and pasteurisation can significantly decrease the CMV viral load in milk
Breastfeeding

References:

10 Initiate breastfeeding and administer oral vitamin D drops

Quick info:
Initiate breastfeeding:
• the World Health Organization (WHO) recommends that infants are exclusively breastfed from birth until age 4-6 months for optimal infant and maternal health [1,4,5]
• the UK Baby Friendly Initiative (Step 4) recommendation is that health care professionals should ‘help mothers initiate breastfeeding soon after the birth’ [5]
• all breastfed infants should receive oral vitamin D drops:
  • drops should be given daily, beginning during the first 2 months of life and continuing until the daily consumption of vitamin D-fortified formula or milk is 500mL [2]
  • exclusive breastfeeding alone is not sufficient in protecting babies from the risk of vitamin D deficiency [8]
• intramuscular (IM) vitamin K is recommended after birth [2,5] and the American Academy of Pediatrics (AAP) recommends this after the first feed [2]:
  • if parents decline IM vitamin K for their baby, offer oral vitamin K as second line [5]
• advise parents that oral vitamin K must be given according to manufacturers instructions and will require multiple doses [5]
• while in hospital, ensure privacy, adequate rest, access to food and drink, and that mother and baby are not separated unless medically indicated [5]
• provide information on the benefits of colostrum [5]
• mothers should be encouraged to continue to practise baby-led feeding throughout the time they are breastfeeding [1,5]
• the importance of night time feeding for milk production should be explained to mothers [5]
• supplements (water, glucose water, formula, and other fluids) should not be given to breastfeeding newborn infants unless medically indicated and ordered by a physician [2]
• pacifier use is best avoided during the initiation of breastfeeding and used only after breastfeeding is well established [2]

Advise the mother to:
• initiate breastfeeding within the first hour after birth to establish effective feeding behaviour [2]
• initiate skin-to-skin contact with the infant within 30 minutes of birth and maintain for the first hour after birth or until after the first feed [1,2,5]
• avoid unnecessary separation [2,5]
• continue breastfeeding until the infant is satisfied [5]
• breastfeed the infant 8-12 times in 24 hours (approximately every 2-3 hours) [2,5]
• maximise contact with her infant – unless maternal sputum is positive for tuberculosis (TB) bacilli [8]:
  • consider treating both mother and infant and isolating mother and infant until her sputum test is negative
• wake the infant if 4 hours have passed since the last feed by [5]:
  • massaging the abdomen, back, legs, arms
  • changing the infant’s nappy
  • placing the infant skin to skin
• assess for signs of hunger, including [2,5]:
  • crying (a late sign)
  • restlessness
  • increased alertness
  • sucking sounds and movements
  • hand to mouth movements

Provide additional support with positioning and attachment to women who have had:
• a narcotic or a general anaesthetic, as the baby may not initially be responsive to feeding – infants affected by maternal medications may require assistance for effective latch-on [2,5]
• a caesarean section, particularly to assist with handling and positioning the baby to protect the woman’s abdominal wound [5]
• delayed initial contact with their baby [2,5]
Breastfeeding

11 Breastfeeding techniques

Quick info:
The principles of latching the infant need to be applied [2]:
• infant level with nipple, facing mother [5]
• nipple to nose [5]
• infant to breast, not breast to infant [5]
• infant's neck and shoulders supported, not the back of the head, so that the infant can tilt its head backwards as it approaches the breast and feeds [5]

Mother's feeding sitting position [5]:
• ensure a horizontal lap with feet flat on the floor
• upright position with back well supported
• with the infant turned toward the mother on the level of her nipple, holding the infant's neck and shoulders with the opposite hand and supporting the body with the forearm, with the infant's bottom supported by the elbow
• as the infant 'gapes' (s)he can be moved swiftly onto the breast
• once the infant is latched on, a pillow can be used for support

References:

12 Observation and advice

Quick info:
Observation of breastfeeding involves assessing [5]:
• signs of milk transfer (in mother and infant)
• number of successful feedings in 24 hours
• number of infant urinations in 24 hours
• number of infant bowel movements in 24 hours
• comfort of the mother
• the mother's breast and nipple condition, including nipple shape after feeding
• the infant's weight

If problems with breastfeeding are observed in the first 24 hours, consider involving a midwife to provide appropriate support and guidance [5]:
• if the infant is still not feeding or looks unwell, refer to a paediatrician

Advise the mother to:
• adopt a comfortable position [5]
• align the infant's head and body [5]
• position the infant level with, and facing, the breast [5]
• allow infant to attach to the breast [5]
• continue breastfeeding until the infant is satisfied [5]
• breastfeed the infant approximately 8-12 times in 24 hours (approximately every 2-3 hours) [2]
• in the first few weeks after birth, wake the infant if 4 hours have passed since the last feed – wake the infant by [5]:
  • massaging the abdomen, back, legs, or arms
  • changing the infant's nappy
  • placing the infant skin to skin

References:
Breastfeeding


13 Parent support and education

Quick info:
Postnatal parent support and education is important and involves home visits by a midwife or health visitor [1-5].
A new birth visit for breastfed babies from a healthcare professional aims to assess:
• the health needs of the baby and parents [5]
• infant weight [2]
• physical examination (especially for jaundice and hydration) [2]
• maternal history of breast problems, eg painful feedings, engorgement [5]
• infant elimination patterns [2]
• observed breastfeeding formally and evaluate [2]
Effective breastfeeding educational material needs to be [4]:
• clinically accurate and informative
• appropriate for, and sensitive to cultural attitudes at all levels of society
• compliant and consistent with hospital guidelines
• informative for other family members
• supplemented by community-based peer support groups

References:

14 Signs of successful breastfeeding

Quick info:
Signs of correct infant attachment include [5]:
• infant's mouth is wide open and they have a large mouthful of breast
• infant's chin is touching the breast
• infant's bottom lip is curled back
• more of the areola (brown skin around the nipple) is visible above the infant's top lip than below their bottom lip, if any is visible at all
• infant's nose is either touching the breast or very close to the breast, but is not squashed
• infant's cheeks are rounded and not sucked in
• infant's sucking pattern changes from short sucks to long deep sucks with pauses
• infant's head, shoulders, and body should all be in line and turned towards the mother's body:
  • if the infant is twisted, once attached to the breast they will attempt to straighten by pulling their head back, thus losing the good latch
• lack of pain – the mother may be aware of her 'let down' at the beginning of the feed, but this should fade quickly [8]:
  • the let down reflex is a normal and necessary part of breastfeeding and:
    • is controlled by prolactin and oxytocin
    • allows milk to be released into the milk ducts from the milk glands
Signs in the infant of successful milk transfer include:
• mouth is moist with milk [5]
• regular pattern of sucking [5]
• regular and audible swallowing [5]
• arms and hands are relaxed [5]
• at least three bowel movements in 24 hours after day 1 [8]
Breastfeeding

- at least six clear pale yellow urinations per day by day 4 [8]
- infant reaches original birth weight by day 10 [8]

Signs of successful breastfeeding in the mother include:
- strong tugging on nipple when the infant is suckling [5]
- breast softens while feeding [5]
- opposite breast leaking milk while feeding [5]
- nipple shows no signs of compression after feeding [5]
- uterine contractions during or after breastfeeding for up to 5 days after birth [8]
- increased lochia flow during or after breastfeeding for up to 5 days after birth [8]
- thirst [5]
- relaxation [5]

NB: Not all signs are experienced by all women or at every feeding [8].

Indicators that the infant is receiving insufficient milk include [5]:
- poor weight gain
- poor urine output
- occurring together, it is probable that the infant has not received enough milk in the past 24-48 hours

References:

15 Common problems

Quick info:
Anticipate the common problems that may occur while breastfeeding, including [5]:
- nipple soreness and pain
- breast infection and mastitis
- breast engorgement
- cracked nipples

women should be advised that the 'let down' reflex is a normal and necessary part of breastfeeding [8]:
- pain, stress, and anxiety can interfere with the 'let down' reflex, which may cause the retention of milk within the milk glands, leading to additional pain and anxiety
- not all women experience the 'let down' reflex

References:

16 Continue successful breastfeeding

Quick info:
Continuing successful breastfeeding:
- encourage unrestricted breastfeeding frequency and duration [5]
- advise women that babies generally stop feeding when they are satisfied, which may follow a feed from only one breast [5]
- reassure women that brief discomfort at the start of feeds in the first few days is not uncommon, but this should not persist [5]
- at each feed, the first breast offered should be alternated so that both breasts receive equal stimulation and draining [2]
- babies should be offered the second breast if they do not appear to be satisfied following a feed from one breast [2,5]
- advise women that if their baby is not attaching effectively he or she may be encouraged, eg by the woman teasing the baby’s lips with the nipple to get him or her to open their mouth [5]
- advise women of the indicators of good attachment, positioning, and successful feeding [5]
- discuss the woman’s experience with breastfeeding at each contact to assess if she is on course to breastfeed effectively and identify any need for additional support [5]
- assess breastfeeding progress and document in the postnatal care plan at each contact [5]:
  - formal evaluation of breastfeeding should be undertaken by trained carers at least twice daily and fully documented in the record during each day in the hospital after birth [2]
  - encourage the mother to record the time and duration of each breastfeeding, as well as infant urine and stool output during the early days of breastfeeding in the hospital and the first weeks at home to help facilitate the evaluation process [2]

Last reviewed: 29-Jul-2010    Due for review: 29-Feb-2012    Printed on: 05-Aug-2010    © Map of Medicine Ltd    All rights reserved

IMPORTANT NOTE
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17 Expression and storage of breast milk

Quick info:

Advice on breast milk:
- babies should be exclusively breastfed for as long as possible [5]
- when direct breastfeeding is not possible, expressed human milk should be provided [2]
- demonstrate to the mother how to hand express their colostrum or breast milk and advise on how to correctly store and freeze it [5]
- proper methods of expression and storage may limit bacterial contamination of breast milk [5]
- breast pumps should be available in hospital, particularly for women who have been separated from their babies, to establish lactation [5]
- provide all women who use a breast pump instructions on how to use it [5]

Advice for mothers about expressing and storing milk:
- sterilise all equipment before use, including [5]:
  - collecting bottles and teats
  - funnels
  - hand pump
- wash hands before handling sterilised equipment and expressing milk [8]
- methods for expressing milk include [5]:
  - hand expressing – inexpensive and allows for skin to skin contact that may increase milk supply
  - hand pump expressing
  - electric pump expressing
- before expressing milk, gently massage the whole breast several times, starting from the top of the breast towards the nipple [8]
- store milk in bottles (hard plastic or glass) [8]
- label bottles with the date and time of expression [8]
- storage conditions for expressed milk include [8]:
  - 5 hours at room temperature (25°C)
  - 24 hours in a portable insulated container with an ice pack (15°C)
  - 3-5 days in a refrigerator (2-4°C)
  - up to 6 months in a freezer (-18°C or lower)
- thaw frozen milk slowly in a refrigerator and use within 24 hours or immediately if thawed at room temperature [5]
- microwave ovens are not recommended for thawing or warming breast milk [5]
- discard any milk left over from a feed if it has been previously thawed or rewarmed [5]

References:

18 Duration of breastfeeding

Quick info:

Breast milk contains substantial amounts of key nutrients (proteins, fat, most vitamins) needed by the infant for optimal health, growth and development for at least the first year of life [1,2,5,11]:
- the World Health Organization (WHO) recommends that infants are exclusively breastfed for the first 6 months of life (and up to 2 years or longer) for optimal infant and maternal health [1,4,5]
- complementary foods rich in iron should be introduced gradually beginning around age 6 months [2]
- there is no upper limit to the duration of breastfeeding and no evidence of psychological or developmental harm from breastfeeding into the third year of life or longer [2]
- breastfeeding should be unrestricted, and should be facilitated whenever the baby shows signs of hunger [5]

Parents and their advisors should consider potential obstacles to continuation of breastfeeding and assess these if possible [2,3,5]:
- insufficient prenatal education about breastfeeding [2]
- lack of guidance or follow-up care from healthcare professionals [2,3]
Breastfeeding

- multiple births [5]
- medication use [2]
- acute or chronic disease (in the mother or infant) [8]
- previous breastfeeding difficulties [8]
- cracked or painful nipples [5]
- oral abnormalities in the infant, eg cleft lip or palate, ankyloglossia (tongue-tie) [5]
- neuromotor problems in the infant, eg Down's syndrome [5]
- breast surgery, trauma, abnormality [5]
- lack of family or community support [2,3]
- maternal employment obligations [2]
- postpartum depression (PPD) [9]:
  - women with PPD are more likely to discontinue breastfeeding
  - discontinuation at 12 weeks has been associated with the presence of depressive symptoms

References:

19 Weaning

Quick info:
When weaning, advise the mother:
- to breastfeed exclusively for 6 months after birth, if possible [1,2,5]
- to gradually complement breast milk with iron-rich solid food for up to 2 years, if possible and mutually desired [2]
- to eliminate one breastfeed every 2-3 days when weaning the infant [2]
- that iron-fortified breast milk substitute (formula) is recommended once breastfeeding is stopped [2]
- that cow's milk is not recommended for children age 12 months or younger [2]
- that supplementary water and juice are not necessary for the first 6 months, even in hot climates [2]
- to manually express breast milk to prevent engorgement [5]
- to use intermittent cool compression to relieve any pain and swelling from engorgement [5]

Before recommending premature weaning, consider the risks of not receiving human milk [2].

References:
Breastfeeding

Key Dates

Due for review: 29-Feb-2012
Last reviewed: 29-Jul-2010, by International
Updated: 29-Jul-2010

Accreditations

The pathway is accredited by:

The Chief Knowledge Officer of the NHS:
Accreditation attained: 30-Jul-2010
Due for review: 29-Feb-2012

Disclaimer

Evidence summary for Breastfeeding

The pathway is based on our interpretation of the following guidelines (1, 4, 5, [234]). All of these guidelines have been assessed for quality and prioritised for inclusion based on their methodological quality. All intervention nodes (i.e. those concerning therapy and therapeutic advice) have been graded for the quality of the evidence underlying them. Supporting resources for key non-interventional nodes have also been listed, but non-interventional nodes have not been graded. This pathway has undergone external peer review.

Update: This pathway was updated based on the NICE guidance ([234]) in November 2006 and ([293]) in May 2007.

Search date: Mar-2010

References

This is a list of all the references that have passed critical appraisal for use in the pathway Breastfeeding

ID  Reference
1  Department of Health. Commissioning local breastfeeding support services. London: Department of Health; 2009.
   http://pediatrics.aappublications.org/cgi/reprint/115/2/496
   http://www.annals.org/content/149/8/565.full.pdf
   http://www.nnchta.org/execsumm/summ425.htm
   http://www.nice.org.uk/download.aspx?o=CG37NICEguideline
   http://www.liebertonline.com/doipdf/10.1089/bfm.2009.0050
7  Database of uncertainties about the effects of treatments (DUETs). Will breast feeding reduce the chances of a baby developing atopic eczema?. UK: DUETs; 2009.
   http://pediatrics.aappublications.org/cgi/reprint/123/4/e736
    http://www.ncbi.nlm.nih.gov/pubmed/17294355?dopt=Citation

Disclaimers

Last reviewed: 29-Jul-2010  Due for review: 29-Feb-2012  Printed on:  05-Aug-2010    © Map of Medicine Ltd  All rights reserved

IMPORTANT NOTE
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Breastfeeding

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