

Online Supplementary Material

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Behavioral Interventions to Promote Breastfeeding: Recommendations and Rationale From the U.S. Preventive Services Task Force

This statement summarizes the U.S. Preventive Services Task Force (USPSTF) recommendations on counseling to promote breastfeeding, a new topic for the USPSTF. Explanations of the ratings and of the strength of overall evidence are given in Appendix A and Appendix B, respectively. The complete information on which this statement is based, including evidence tables and references, is available in the systematic evidence review¹ on this topic, which can be obtained through the USPSTF web site (www.preventiveservices.ahrq.gov) and through the National Guideline Clearinghouse™ (<http://www.guideline.gov>). The recommendation statement and the systematic evidence review are also available from the AHRQ Publications Clearinghouse in print or through subscription to the *Guide to Clinical Preventive Services, Third Edition: Periodic Updates*. To order, contact the Clearinghouse at 1-800-358-9295 or e-mail ahrqpubs@ahrq.gov.

The USPSTF recommendations are independent of the U.S. Government. They do not represent the views of the Agency for Healthcare Research and Quality (AHRQ), the U.S. Department of Health and Human Services, or the U.S. Public Health Service.

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SUMMARY OF RECOMMENDATIONS

The USPSTF recommends structured breastfeeding education and behavioral counseling programs to promote breastfeeding. **B recommendation.**

The USPSTF found fair evidence that programs combining breastfeeding education with behaviorally-oriented counseling are associated with increased rates of breastfeeding initiation and its continuation for up to 3 months, although effects beyond 3 months are uncertain. Effective programs generally involved at least 1 extended session, followed structured protocols, and included practical, behavioral skills training and problem-solving in addition to didactic instruction.

The USPSTF found fair evidence that providing ongoing support for patients, through in-person visits or telephone contacts with providers or counselors, increased the proportion of women continuing breastfeeding for up to 6 months. Such support, however, had a much smaller effect than educational programs on the initiation of breastfeeding and its continuation for up to 3 months. Too few studies have been conducted to determine whether the combination of education and support is more effective than education alone.

The USPSTF found insufficient evidence to recommend for or against the following interventions to promote breastfeeding: brief education and counseling by primary care providers; peer counseling used alone and initiated in the clinical setting; and written materials, used alone or in combination with other interventions. **I recommendation.**

The USPSTF found no evidence for the effectiveness of coun-

seling by primary care providers during routine visits and generally poor evidence to assess the effectiveness of peer counseling initiated from the clinical setting when used alone to promote breastfeeding in industrialized countries. The evidence for the effectiveness of written materials suggests no significant benefit when written materials are used alone and mixed evidence of incremental benefit when written materials are used in combination with other interventions.

CLINICAL CONSIDERATIONS

Effective breastfeeding education and behavioral counseling programs use individual or group sessions led by specially trained nurses or lactation specialists, usually lasting 30 to 90 minutes. Sessions generally begin during the prenatal period and cover the benefits of breastfeeding for infant and mother, basic physiology, equipment, technical training in positioning and latch-on techniques, and behavioral training in skills required to overcome common situational barriers to breastfeeding and to garner needed social support.

- Hospital practices that may help support breastfeeding include early maternal contact with the newborn, rooming-in, and avoidance of formula supplementation for breastfeeding infants.
- Commercial discharge packs provided by hospitals that include samples of infant formula and/or bottles and nipples are associated with reducing the rates of exclusive breastfeeding.
- Mothers who wish to continue breastfeeding after returning to work, especially those working full-time, may need to use an electric or mechanical pump to maintain a sufficient breast milk supply.
- Few contraindications to breastfeeding exist. In developed countries, infection with human immunodeficiency virus (HIV) in the mother is considered a contraindication to breastfeeding, as is the presence of current alcohol and drug use/dependence. Some medications (prescription and non-prescription) are contraindicated or advised for use "with caution" and appropriate clinical monitoring among lactating women.² Clinicians should consult appropriate references for information on specific medications, including herbal remedies.

SCIENTIFIC EVIDENCE

Benefits of Breastfeeding

Breast milk is the optimal infant food. It has nutritional properties superior to formula and transmits protective immunoglobulins to the newborn. Observational studies in North America and Europe have found that

APPENDIX A

U.S. Preventive Services Task Force Recommendations and Ratings

The Task Force grades its recommendations according to one of 5 classifications (A, B, C, D, I) reflecting the strength of evidence and magnitude of net benefit (benefits minus harms):

- A.** The USPSTF strongly recommends that clinicians routinely provide [the service] to eligible patients. The USPSTF found good evidence that [the service] improves important health outcomes and concludes that benefits substantially outweigh harms.
- B.** The USPSTF recommends that clinicians routinely provide [the service] to eligible patients. The USPSTF found at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.
- C.** The USPSTF makes no recommendation for or against routine provision of [the service]. The USPSTF found at least fair evidence that [the service] can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.
- D.** The USPSTF recommends against routinely providing [the service] to asymptomatic patients. The USPSTF found at least fair evidence that [the service] is ineffective or that harms outweigh benefits.
- I.** The USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing [the service]. Evidence that [the service] is effective is lacking, of poor quality, or conflicting and the balance of benefits and harms cannot be determined.

breast-fed infants have reduced rates of otitis media (odds ratios [OR] 0.39-0.61)³ and respiratory infection (adjusted incidence density ratio 0.78)⁴ compared with non-breast-fed infants. A recent large randomized trial of breastfeeding promotion in Belarus found that breastfeeding reduces the incidence of gastroenteritis (adjusted OR, 0.60) and atopic eczema (adjusted OR, 0.54),⁵ consistent with the findings of earlier observational studies in other countries.^{6,7} For the mother, breastfeeding causes more rapid return of uterine tone and has been associated with lower risk for ovarian and breast cancer. Contraindications to breastfeeding are uncommon and include maternal HIV infection and the use of selected medications.²

National data from 1998 showed that 64% of all mothers breast-fed postpartum, but only 29% of all mothers and only 19% of black mothers were breastfeeding by 6 months.⁸ Thus, the US population falls short of the goals set by Healthy People 2010: for 75% of mothers to be breastfeeding immediately postpartum, 50% at 6 months, and 25% at 1 year.⁹

Effectiveness of Structured Breastfeeding Education and Behavioral Counseling Programs

Several randomized controlled trials have found that structured breastfeeding education and behavioral counseling programs improve rates of breastfeeding initiation, breastfeeding duration, or both.¹⁰⁻¹³ The most effective interventions used brief, relatively directive health education combined with behaviorally-oriented skills training and problem-solving coun-

seling. They all used face-to-face sessions conducted outside the routine clinical visit. Several included efforts to bolster social support for breastfeeding initiation and maintenance, both in the health care setting (provider support, supportive hospital policies) and home setting (bolstering partner and/or family support for breastfeeding).

In most programs studied, nurses with advanced training as lactation consultants or midwives administered the interventions. Programs varied widely in other aspects of their format, including whether the sessions were for groups or individuals, the duration of sessions, and the number of sessions. Sessions generally ranged from 30 to 90 minutes, with participants attending from 1 to 8 sessions. Programs began during the prenatal period, and the majority included additional interventions (ie, support, home visits, or written materials).¹⁴⁻¹⁷ Baseline levels of breastfeeding varied widely among study populations: 31% to 83% of controls initiated breastfeeding and 14% to 82% of controls breast-fed for 1 to 3 months.

A meta-regression analysis of the available randomized controlled trials of breastfeeding interventions was conducted for the USPSTF. The purpose of this analysis was to assess the independent effects of breastfeeding education, ongoing support, and written materials.¹ Educational programs increased the proportions of mothers initiating breastfeeding (risk difference 23%; 95% confidence interval [CI], 12-34) and continuing to breastfeed for 1 to 3 months (risk difference 39%; 95% CI, 27-50). These differences imply that enrolling 10 women in such programs will result in 2 additional women initiating breastfeeding and 4 additional women breastfeeding for 1 to 3 months. In pooled analysis, education did not significantly increase breastfeeding duration at 4 to 6 months (risk difference 4%; 95% CI, -6-16).

Effectiveness of Support From Providers and Peers

Eight randomized trials examined the effects of breastfeeding support used alone or in combination with breastfeeding education and counseling. These trials used lactation consultants, nurses, or peer counselors to provide pre-arranged appointments and/or unscheduled, problem-oriented visits or telephone calls. In the meta-analysis conducted for the USPSTF,¹ the independent effect of support alone on breastfeeding was modest: 6% (95% CI, -2-15) for the initiation of breastfeeding; 11% (95% CI, 3-19) for the continuation of breastfeeding for 1 to 3 months; and 8% (95% CI, 2-16) for the continuation of breastfeeding for 4 to 6 months. Four studies examined the impact of education and sup-

APPENDIX B

U.S. Preventive Services Task Force Strength of Overall Evidence

The USPSTF grades the quality of the overall evidence for a service on a 3-point scale (good, fair, poor):

Good: Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.

Fair: Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence on health outcomes.

Poor: Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

port on the initiation and continuation of breastfeeding for up to 6 months. In pooled analysis, the combined effects of education and support significantly increased breastfeeding initiation (21%; 95% CI, 7-35), its duration for 1 to 3 months (36%; 95% CI, 22-49), and its duration for 4 to 6 months (13%; 95% CI, 1-25). However, the effects of combined education and support on breastfeeding initiation and its continuation were not higher than the estimated effect of education alone.

No studies have evaluated whether advice by the woman's primary obstetric provider or by the infant's primary pediatric provider in the course of in-hospital care or routine preventive visits is effective on its own in increasing breastfeeding rates.¹³

Effectiveness of Other Breastfeeding Education and Support Measures

Peer counselors are potentially a useful source of support and motivation for breastfeeding. However, studies of peer counseling initiated from the clinical practice setting were judged to be of either poor quality or of limited generalizability due to the use of financial incentives as part of the intervention.^{15,16}

Written materials alone do not appear effective in increasing breastfeeding rates. The evidence on whether written materials enhance the effectiveness of structured behavioral counseling programs is mixed. Few studies of in-hospital interventions, including rooming-in and early maternal contact, have been conducted in industrialized countries.¹⁸⁻²⁰ Those that have been conducted used multiple interventions, making it difficult to ascertain the benefit of each individual practice.

Commercial discharge packs for new mothers typically include free samples of infant formula, bottles, and plastic nipples. One recent systematic review found that such packs are associated with reduced rates of exclusive breastfeeding at 1 month and any breastfeeding at 4 months.²¹

DISCUSSION

In order to promote wider use of effective breastfeeding programs, research is needed to examine barriers to their use, the costs and cost-effectiveness of these programs and their individual components, and their effectiveness in more diverse populations and clinical settings.

The role of the primary obstetric, pediatric, or family medicine provider in promoting breastfeeding during clinical preventive visits has not received the attention it deserves. Because such visits are well-established elements of routine prenatal and postnatal care, they have rich but untested potential to yield effective and cost-effective approaches to breastfeeding promotion.

RECOMMENDATIONS OF OTHERS

The Canadian Task Force on Preventive Health Care (CTFPHC) concludes that there is good evidence to counsel women to breastfeed and to implement peripartum interventions that promote breastfeeding.²² The CTFPHC is in the process of updating its recommendation. The American Academy of Family Physicians recommends that physicians counsel pregnant women about breastfeeding and include behavioral supports, such as contact with lactation consultants, rooming-in, and early initiation of breastfeeding.²³ The World Health Organization, the United Nations Children's Fund, and the American Academy of Pediatrics (AAP) each recommend breastfeeding and include recommendations that clinicians promote breastfeeding, but none of these organizations include specific recommendations on the nature or extent of any counseling that should be undertaken by clinicians.^{24,25} The AAP also recommends that physicians work to promote support for breastfeeding at the department, hospital, and community level. Other organizations that support counseling to promote breastfeeding include the American College of Obstetricians and Gynecologists, the American Dietetic Association, and the International Lactation Consultants Association.²⁶⁻²⁸

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