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NATIONAL GUIDELINE CLEARINGHOUSE™ (NGC™) GUIDELINE SYNTHESIS

SCREENING FOR BREAST CANCER

Guidelines

1. Royal New Zealand College of General Practitioners (RNZCGP). Early detection of breast cancer. Wellington (New Zealand): Royal New Zealand College of General Practitioners; 1999. 61 p. [176 references]
2. Canadian Task Force on Preventive Health Care (CTFPHC).
   - Preventive health care, 2001 update: screening mammography among women aged 40-49 years at average risk of breast cancer. CMAJ 2001 Feb 20;164(4):469-76. [76 references]
   - Preventive health care, 2001 update: should women be routinely taught breast self-examination to screen for breast cancer? CMAJ 2001 Jun 26;164(13):1837-46. [78 references]
3. Brigham and Women's Hospital (BWH). Breast disease. Guide to prevention, diagnosis and treatment. Boston (MA): Brigham and Women's Hospital; 2001. 9 p. [13 references]
4. U.S. Preventive Services Task Force (USPSTF). Screening for breast cancer: recommendations and rationale. Ann Intern Med 2002 Sep 3;137(5 Part 1):344-6. [10 references]
5. Kaiser Permanente Southern California (KP-SC). Breast cancer screening. Pasadena (CA): Kaiser Permanente Southern California; 2003 Apr. 4 p.
6. American College of Obstetricians and Gynecologists (ACOG). Breast cancer screening. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2003 Apr. 12 p. (ACOG practice bulletin; no.42). [94 references]
7. American Cancer Society (ACS). ACS guidelines for breast cancer screening: update 2003. CA Cancer J Clin 2003 May-Jun;53(3):141-69. [184 references]

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INTRODUCTION:

A direct comparison of RNZCGP, CTFPHC, BWH, USPSTF, KP-SC, ACOG, and ACS recommendations for screening asymptomatic women for breast cancer is provided in the tables below. The guidelines differ somewhat in scope, with some of the guidelines including recommendations beyond routine screening. For example, RNZCGP's guideline also includes recommendations for risk assessment, diagnostic recommendations for women with symptoms suggestive of breast cancer, and information for cultural considerations for Maori women. BWH's guideline, which is based on detailed clinical algorithms, also provides recommendations for breast cancer risk determination and for managing benign breast symptoms and other common breast problems such as mastalgia. In addition to its screening recommendations, ACOG's guideline briefly addresses breast cancer risk assessment, the use of mammography for diagnostic purposes when a lesion is palpated, and referral for genetic counseling. The scope of the ACS guideline differs from the others in that it examines alternative screening modalities for women at increased risk and potential new imaging technologies for women at average risk of breast cancer. The ACS guideline also gives special focus to the screening of older women and women with comorbid conditions.

Table 1 gives a broad overview of the scope of the guidelines included in this synthesis; Table 2 details each guideline's recommendations for mammographic screening as well as for other screening strategies; Table 3 specifies the potential benefits and harms associated with breast cancer screening as described in each of the guidelines.

The evidence supporting the major recommendations is also identified, with the definitions of the rating schemes used by RNZCGP, CTFPHC, USPSTF, and ACOG included in Table 4.

Following the content comparison, areas of agreement and differences among the guidelines are discussed.

Listed below are common abbreviations used within the tables and discussions:

- ACOG, American College of Obstetricians and Gynecologists
- ACS, American Cancer Society
- BSE, breast self-examination
- BWH, Brigham and Women's Hospital
- CBE, clinical breast examination
- CTFPHC, Canadian Task Force on Preventive Health Care
- DCIS, Ductal carcinoma in situ
- KP-SC, Kaiser Permanente-Southern California
- RNZCGP, Royal New Zealand College of General Practitioners

- USPSTF, United States Preventive Services Task Force

TABLE 1: SCOPE	
	Objective
RNZCGP (1999)	• To help primary care providers provide consistent advice to women about the risk factors for and the early detection and diagnosis of breast cancer • To provide information about cultural considerations for Maori, which may be useful for improving the service effectiveness that primary care providers can offer
CTFPHC (2001)	• To make recommendations on (1) screening mammography in asymptomatic Canadian women aged 40 to 49 years at average risk of breast cancer and (2) teaching of BSE in asymptomatic women of all ages in the general population
BWH (2001)	• To provide physicians with clear guidelines for screening as well as clinical pathways for risk counseling, diagnosis, and treatment of symptomatic breast disease • To distinguish the roles of the primary care physician, Breast Center, and breast surgeon
USPSTF (2002)	• To update the 1996 recommendations on screening for breast cancer in women at average or high risk
KP-SC (2003)	• To assist physicians and other health care professionals in counseling women on the benefits and harms of breast cancer mammography screening with or without CBE
ACOG (2003)	• To clarify the rationale for current breast cancer screening guidelines and evaluate the evidence regarding screening techniques • To focus on mammography and other detection techniques as screening tools to identify nonpalpable lesions • To aid practitioners in making decisions about appropriate obstetric and gynecologic care
ACS (2003)	• To review the existing ACS guidelines for the early detection of breast cancer based on evidence that has accumulated since the

	last revision in 1997
Target Population	

RNZCGP (1999)	• New Zealand
	• Asymptomatic and symptomatic women
	  • Women aged 50 to 74 years without symptoms suggestive of breast cancer
	  • High-risk asymptomatic women aged 40 and over
	
	Note: Women with symptoms suggestive of breast cancer and Maori women are considered in the guideline, but these target populations are not addressed in this synthesis.

CTFPHC (2001)	• Canada • Asymptomatic women aged 40 to 49 at average risk of breast cancer (mammography screening) • Asymptomatic women of all ages in the general population (routine teaching of breast self-examination)
BWH (2001)	• United States • Women 20 years of age and older (universal screening recommendation for clinical breast exam and breast self-exam) • Women 40 years of age and older (universal screening recommendation for mammography) Note: Women with palpable breast masses or mastalgia are also considered in the guideline for diagnostic and treatment recommendations, and women at high risk of breast cancer are considered for recommendations for genetic counseling or chemoprevention. These topics, however, are not considered in this synthesis.
USPSTF (2002)	• United States • Women aged 40 years and older

KP-SC (2003)	• United States
	• Asymptomatic women in the following age ranges: under 40 years, 40 to 49 years, 50 to 69 years, 70 to 74 years, or 75 years and older
	• Asymptomatic women of any age with any of the following selected risk factors:
	  • Personal history of breast cancer (including ductal carcinoma in situ)
	  • Breast biopsy showing atypical hyperplasia, lobular neoplasia (lobular carcinoma in situ), or histology unknown
	  • Mother or sister diagnosed with breast cancer at age 50 or

	older • Mother, sister, or daughter diagnosed with breast cancer before age 50 • Blood relative with a confirmed, clinically significant alteration in a BRCA gene (associated with increased risk for development of breast cancer)
ACOG (2003)	• United States • Adult women
ACS (2003)	• United States • Women aged 40 years or older
Intended Users	
RNZCGP (1999)	Advanced Practice Nurses; Nurses; Physicians
CTFPHC (2001)	Advanced Practice Nurses; Physicians; Physician Assistants; Allied Health Care Practitioners
BWH (2001)	Advanced Practice Nurses; Health Care Providers; Physician Assistants; Physicians
USPSTF (2002)	Advanced Practice Nurses; Physicians; Nurses; Physician Assistants; Allied Health Care Practitioners; Students
KP-SC (2003)	Advanced Practice Nurses; Allied Health Personnel; Physician Assistants; Physicians
ACOG (2003)	Physicians
ACS (2003)	Advanced Practice Nurses; Allied Health Personnel; Health Care Providers; Health Plans; Hospitals; Managed Care Organizations; Nurses; Patients; Physician Assistants; Physicians; Public Health Departments
Screening Interventions Considered	
RNZCGP (1999)	• Risk assessment (identifying risk factors for developing breast cancer, such as gender, age, family history, medical history, radiation exposure; genetic testing for BRCA 1 and 2 genes) • Breast cancer screening • Mammography alone or with clinical breast examination (CBE)

	• Breast self-examination (BSE) Note: Additional diagnostic procedures (the triple test: CBE, diagnostic mammography, fine needle aspiration biopsy; diagnostic ultrasound; core biopsy; and other diagnostic modalities) are considered in the guideline but are not addressed in this synthesis
CTFPHC (2001)	• Mammographic breast cancer screening • Routine teaching of BSE as part of the periodic health examination Excluded Topics: CBE, mammographic screening in populations other than asymptomatic women aged 40-49 years

BWH (2001)	• Breast cancer screening
	  • Mammography
	  • CBE
	  • BSE
	
	Note: Assessment of risk factors for breast cancer and surveillance of major risk factors, including genetic predisposition and genetic counseling, are also considered, but specific recommendations for screening of high-risk women are not given. Additional diagnostic procedures, including ultrasound, image-guided core biopsy, and image-guided aspiration, as needed, are discussed in the guideline but are not addressed in this synthesis.

USPSTF (2002)	• Routine screening with mammography alone or mammography and annual CBE • CBE alone • BSE
KP-SC (2003)	• Mammography • CBE • BSE
ACOG (2003)	• Mammography • CBE • BSE Note: Additional diagnostic procedures for the evaluation of a palpable breast mass (i.e., ultrasound, diagnostic mammography, and fine needle aspiration) and referral for management and genetic counseling are discussed in the guideline but are not addressed in this synthesis.

ACS (2003)	• Breast cancer screening in women of average risk
	  • Annual mammography beginning at age 40
	  • CBE

	• BSE • Screening of older women with comorbid conditions • Screening of women at high risk Note: Additional screening modalities such as ultrasound and magnetic resonance imaging (MRI) were considered but evidence was insufficient for making a formal recommendation.

TABLE 2: COMPARISON OF RECOMMENDATIONS FOR BREAST CANCER SCREENING	
COMPARISON OF RECOMMENDATIONS FOR MAMMOGRAPHIC SCREENING	
RNZCGP (1999)	Mammography is the principle screening procedure for breast cancer (in women with no symptoms). • For women under age 40, screening mammography is not recommended • For women aged 40 to 49, annual routine mammography is not advised unless they are higher risk (as defined in the guideline). [Level I] • For higher risk women (as defined in the guideline) over the age of 40, annual mammography is recommended. [Level III-2] • For women aged 50 to 74 two-yearly mammography is recommended. [Level I]
CTFPHC (2001)	• Women 40 to 49 years old: Current evidence regarding the effectiveness of screening mammography does not suggest the inclusion of the maneuver in, or its exclusion from, the periodic health examination of women aged 40 to 49 at average risk of breast cancer (grade C recommendation). Upon reaching the age of 40, Canadian women should be informed of the potential benefits and risks of screening mammography and assisted in deciding at what age they wish to initiate the maneuver. • Women 50 to 69 years old: The guideline update on mammography screening does not address this population group. • Women $\geq$ 70 years old: The guideline update on mammography screening does not address this population group. • Women at increased risk for breast cancer: The guideline update on mammography screening does not address this population group.
BWH (2001)	• Women aged 50 to 69 years: It is well established that annual mammography reduces breast cancer mortality by about 30% in women age 50 to 69.

	• Women aged 40 to 49 years: Brigham and Women's and Faulkner Hospitals support the recommendation of annual screening mammograms for women in this age group. • Women aged >69 years: No recommendations offered.
USPSTF (2002)	• For women aged 40 and over, the U.S. Preventive Services Task Force recommends screening mammography, with or without clinical breast examination, every 1 to 2 years. (B recommendation). Clinical Considerations • The precise age at which the benefits from screening mammography justify the potential harms is a subjective judgment and should take into account patient preferences. Clinicians should inform women about the potential benefits (reduced chance of dying from breast cancer), potential harms (e.g., false-positive results, unnecessary biopsies), and limitations of the test that apply to women their age. Clinicians should tell women that the balance of benefits and potential harms of mammography improves with increasing age for women between the ages of 40 and 70. • Women who are at increased risk for breast cancer (e.g., those with a family history of breast cancer in a mother or sister, a previous breast biopsy revealing atypical hyperplasia, or first childbirth after age 30) are more likely to benefit from regular mammography than women at lower risk. The recommendation for women to begin routine screening in their 40s is strengthened by a family history of breast cancer having been diagnosed before menopause. • For women aged 50 and older, there is little evidence to suggest that annual mammography is more effective than mammography done every other year. • For women aged 40 to 49, available trials also have not reported a clear advantage of annual mammography over biennial mammography. Nevertheless, some experts recommend annual mammography based on the lower sensitivity of the test and on evidence that tumors grow more rapidly in this age group. • Older women (over age 69 years): The precise age at which to discontinue screening mammography is uncertain. Only two randomized controlled trials enrolled women older than 69, and no trials enrolled women older than 74. Older women face a higher probability of developing and dying from breast cancer but also have a greater chance of dying from other causes. Women with comorbid conditions that limit their life expectancy are unlikely to benefit from screening.

KP-SC (2003)	Average-risk women ages 40 to 49: • Should be informed of the benefits and harms of mammography and offered screening at least every two years. (Evidence Based) Following a discussion of the benefits and harms, women in this age group should be encouraged to make a personal decision, in collaboration with their physician, about whether to be screened. Note: Any woman between age 40 and 49 who requests screening should be given a mammogram. Average-risk women ages 50 to 69: • Should be screened with mammography at least every two years beginning at age 50. (Evidence Based) A large body of evidence has found that screening mammography offers the greatest survival benefit in women in this age group. As a result, these women should be strongly encouraged to have a mammogram at least every 2 years. Average-risk women ages 70 and older: • Women age 70 to 74 should be informed of the potential benefits and harms of mammography screening. (Consensus Based) • Women age 75 and older should be informed that there are no studies on the benefits or harms of mammography screening in this age group. (Consensus Based) Following a discussion of the benefits and harms, these women should be encouraged to make a personal decision, in collaboration with their physician, about whether to be screened, and how frequently. Any woman age 70 or older who requests screening should be given a mammogram. Average-risk women under age 40: • Routine mammography screening is not recommended. (Consensus Based) Women with selected risk factors: • Annual mammography screening is recommended for women with the selected risk factors. (Consensus Based). Risk factors and screening recommendations are as follows:

	• Personal history of breast cancer (including ductal carcinoma in situ) - begin screening after diagnosis. • Breast biopsy showing atypical hyperplasia, lobular neoplasia (lobular carcinoma in situ), or histology unknown - begin screening after diagnosis. • Mother or sister diagnosed with breast cancer at age 50 or older - begin screening at age 40. • Mother, sister, or daughter diagnosed with breast cancer before age 50 - begin screening at age 35. • Blood relative with a confirmed, clinically significant alteration in a BRCA gene associated with increased risk for the development of breast cancer - begin screening after documentation of the genetic alteration in the patient at or after age 18.
ACOG (2003)	• Women aged 40 to 49 years should have screening mammography every 1 to 2 years. (Level B) • Women aged 50 years and older should have annual screening mammography. (Level B) In light of available data, the optimal screening interval appears to be every 1 to 2 years for women aged 40 to 49 and annually thereafter. Current data do not clearly support a recommendation as to whether mammography annually or every 2 years is superior.
ACS (2003)	• Women age 40 to 69 years: Women at average risk should begin annual mammography at age 40. Women should have an opportunity to become informed about the benefits, limitations, and potential harms associated with regular screening. • Older women (over age 69): Screening decisions in older women should be individualized by considering the potential benefits and risks of mammography in the context of current health status and estimated life expectancy. As long as a woman is in reasonably good health and would be a candidate for treatment, she should continue to be screened with mammography. • High-risk women: Women at increased risk of breast cancer might benefit from additional screening strategies beyond those offered to women of average risk, such as earlier initiation of screening, shorter screening intervals, or the addition of screening modalities other than mammography and physical examination, such as ultrasound or magnetic resonance imaging. However, the evidence currently available is insufficient to justify recommendations for any of these screening approaches.
COMPARISON OF RECOMMENDATIONS REGARDING CLINICAL BREAST EXAMINATION AND BREAST SELF-EXAMINATION	
RNZCGP	• CBE may be used in conjunction with mammography screening.

(1999)	[Level I] Mammography is more sensitive than CBE in screening asymptomatic women, but the sensitivity of both CBE and mammography combined is greater than either alone. • While there have been many studies to date, methodological problems in many and the variable findings make it unclear as to any benefit that might accrue from BSE in asymptomatic women. As a result, it is suggested that (1) women, especially those over 40, should be advised to regularly look and feel for breast changes, rather than follow a systematic method of examination; (2) primary care providers should advise women that changes could indicate cancer is present and to report any changes promptly to their doctor; (3) all women who have symptoms suggestive of breast cancer should be encouraged to consult their doctor regardless of the results of recent mammograms.
CTFPHC (2001)	• Women aged 50 to 69: Because there is fair evidence of no benefit, and good evidence of harm, there is fair evidence to support the recommendation that routine teaching of BSE be excluded from the periodic health examination [grade D recommendation, Level I, II-1, II-3 evidence]. • Women aged 40 to 49: Because there is fair evidence of no benefit, and good evidence of harm, there is fair evidence to support the recommendation that routine teaching of BSE be excluded from the periodic health examination [grade D recommendation, level I, II-1, II-3 evidence]. While the evidence indicates no benefit from routine instruction, some women will request teaching in BSE. The pros and cons should be discussed with the woman, and, if breast self-examination is taught, care must be taken to ensure that breast self-examination is conducted in a proficient manner. Note: There is insufficient evidence for effectiveness of routine teaching of BSE in women younger than 40 or older than 70 years, thus precluding making recommendations for teaching breast self-examination to women in these age groups.
BWH (2001)	• A CBE should be performed annually in all women 20 and older. It should include inspection of the nipple for recent inversion or excoriation and examination of the skin for erythema and retraction. To check for retraction, the patient is asked to place her hands on her waist and contract her pectoralis muscles, then to bring her arms over her head. Palpation should begin with the periclavicular and axillary nodes and should progress to a systematic examination of the entire breast, including tissue overlying the sternum, the inframammary fold, and the retroareolar area. • Optimally, BSE is performed 5 to 7 days after the onset of menstruation, when the breast tissue is least engorged in premenopausal women and on the same day of the month for

	postmenopausal women. Randomized controlled clinical trials have shown no reduction in mortality from breast cancer among women who performed monthly BSE. However, since BSE is inexpensive and noninvasive, most physicians recommend it as a screening method to their patients. Patients who find BSE to be anxiety-provoking can be reassured that annual clinical breast examination and screening mammography are sufficient for breast cancer screening.
USPSTF (2002)	• The evidence is insufficient to recommend for or against routine CBE alone to screen for breast cancer. (I recommendation) • The evidence is insufficient to recommend for or against teaching or performing routine BSE. (I recommendation.) • Clinicians who advise women to perform BSE or who perform routine CBE to screen for breast cancer should understand that there is currently insufficient evidence to determine whether these practices affect breast cancer mortality and that they are likely to increase the incidence of clinical assessments and biopsies.
KP-SC (2003)	Breast Self-Detection • Women should be informed of the lack of benefit and the potential harms of breast self-examination. (Consensus Based) • All women should be counseled to seek immediate medical attention upon detection of a breast lump. (Consensus Based) An estimated 45% of breast cancer patients detect their own breast lumps. There is, however, no evidence to demonstrate that this is due to routine BSE or that BSE decreases mortality from breast cancer. As a result, women should be informed of the absence of a benefit of BSE, as well as the potential harms, and encouraged to make a personal decision about whether to perform BSE and how frequently. Clinical Breast Examination • Women should be informed of the lack of evidence of a benefit or harm of routine CBE alone. (Consensus Based) While there is no evidence on the effectiveness of CBE alone, several large trials of mammography screening included CBE as part of the study protocol. The specific contribution of CBE to the benefit is unclear, however. In the absence of benefit, the decision to perform CBE should be determined by the patient and healthcare provider. A mammogram can be ordered without a CBE.
ACOG (2003)	• All women should have CBE annually as part of the physical examination. (Level C)

	Studies of efficacy have looked only at annual CBE; no studies have addressed other intervals. Therefore, there are no data on which to base a recommendation on the frequency of CBE. However, it seems prudent to perform CBE annually, perhaps with the annual physical examination. • Despite a lack of definitive data for or against BSE, BSE has the potential to detect palpable breast cancer and can be recommended.
ACS (2003)	• For average-risk asymptomatic women in their 20s and 30s, it is recommended that CBE be part of a periodic health examination, preferably at least every three years. Asymptomatic women aged 40 and over should continue to receive a clinical breast examination as part of a periodic health examination, preferably annually. • Beginning in their 20s, women should be told about the benefits and limitations of BSE. The importance of prompt reporting of any new breast symptoms to a health professional should be emphasized. Women who choose to do BSE should receive instruction and have their technique reviewed on the occasion of a periodic health examination. It is acceptable for women to choose not to do BSE or to do BSE irregularly.

TABLE 3. BENEFITS/HARMS OF BREAST CANCER SCREENING	
POTENTIAL BENEFITS ASSOCIATED WITH BREAST CANCER SCREENING	
RNZCGP (1999)	• Breast screening reduces breast cancer mortality by 20 to 38% in women aged between 50 and 64 years. It has been estimated 480 lives could be saved over the first five years if mammography screening is provided to the entire female population aged 50 to 69. • Screening mammography has a high sensitivity (80 to 95%) and specificity (93 to 95%) and both of these measures generally increase with a patient's age. Regular two-yearly screening mammography results in a reduction of breast cancer mortality by approximately 30% for women aged 40 to 74. Specifically, mortality is reduced 26 to 34% in women aged over 65 and 20 to 38% in women aged 50 to 64 by two-yearly mammography screening.
CTFPHC (2001)	Potential reduction in mortality rates: Relative risk reduction of 18 to 45% for breast cancer mortality at 10 years was shown in two

	trials and one meta-analysis; no benefit was shown in six other trials. (The only trial that enrolled Canadian women failed to show an effect of screening mammography, possibly because of low power.) Other positive effects of screening mammography in women ages 40 to 49: • Detection of tumour at earlier stage (possibly predictive of less toxic treatment) • Improved cosmesis • Reassurance (72% of cases) • Reduced anxiety about cancer at time of screening
BWH (2001)	• There is increasing evidence that mammographic screening alone can reduce the breast-cancer death rate by 30%, primarily through the identification of smaller, node negative invasive breast cancers. Studies have shown that compliance with screening is significantly increased by in-person and telephone counseling, especially in minority populations. Advances in biopsy techniques, surgery, chemotherapy, hormonal treatment, and supportive therapy have substantially reduced morbidity. The identification of high-risk women and the use of tamoxifen for chemoprevention and prophylaxis have demonstrated potential in preventing the disease in the most vulnerable population. • The primary care physician can play an important role in further reducing the morbidity and mortality associated with the disease by encouraging women to undergo screening and by referring women who have findings suggestive of breast cancer to the appropriate channels for diagnosis and treatment.
USPSTF (2002)	• The USPSTF found fair evidence that mammography screening every 12 to 33 months significantly reduces mortality from breast cancer. Evidence is strongest for women aged 50 to 69, the age group generally included in screening trials. For women aged 40 to 49, the evidence that screening mammography reduces mortality from breast cancer is weaker and the absolute benefit of mammography is smaller than it is for older women. Most, but not all, studies indicate a mortality benefit for women undergoing mammography at ages 40 to 49, but the delay in observed benefit in women younger than 50 makes it difficult to determine the incremental benefit of beginning screening at age 40 rather than at age 50. The absolute benefit is smaller because the incidence of breast cancer is lower among women in their 40s than it is among older women. • The USPSTF concluded that the evidence is also generalizable to women aged 70 and older (who face a higher absolute risk of breast cancer) if their life expectancy is not compromised by comorbid disease. The absolute probability of benefits of regular mammography increases along a continuum with age, whereas

	the likelihood of harms from screening (false-positive results and unnecessary anxiety, biopsies, and cost) diminishes from ages 40 to 70. • The balance of benefits and potential harms, therefore, grows more favorable as women age. The precise age at which the potential benefits of mammography justify the possible harms is a subjective choice.
KP-SC (2003)	The effectiveness of screening tests in reducing mortality from breast cancer varies by the type of test and a woman's age. Mammography Women age 50 to 69: Mammography is most sensitive (ranging from 81 to 98%), and offers the greatest survival benefit among women aged 50 to 69. Meta-analyses of seven large randomized controlled trials of mammography screening found a statistically significant relative reduction of approximately 22% (0.78, 95% confidence interval [CI] 0.70 to 0.87) in mortality risk in screened vs. unscreened women in this age group.
ACOG (2003)	Appropriate breast cancer screening using mammography and other screening techniques
ACS (2003)	• Decreased breast cancer morbidity and mortality due to early detection. • A meta-analysis of seven randomized controlled trials (RCTs) showed a 24% mortality reduction associated with an invitation to screening. • Evidence from service screening (i.e., screening in the community setting) demonstrates that modern, organized screening programs with high rates of attendance can achieve breast cancer mortality reductions equal to or greater than those observed in RCTs. Evaluation of service screening is an important new development because it measures the value of modern mammography in the community and it measures the benefit of mammography screening to women who actually get screened.
POTENTIAL HARMS ASSOCIATED WITH BREAST CANCER SCREENING	
RNZCGP (1999)	False positives. These can lead to unnecessary investigations ranging from repeat mammography to ultrasound, fine needle aspiration biopsy and/or biopsy. There is a significant false positive rate for mammography screening (0.9 to 6.5%), which substantially contributes to the costs associated with screening. In New Zealand, the risk of a false positive for a woman at some point during a 20-year screening programme (aged 50 to 69) has been calculated at 34%.

	False negatives. As with any investigation a negative result may occur even though cancer is present. The sensitivity of screening mammography is 86 to 94% depending on age. Thus the false negative rate is 6 to 14%. Over-treatment. There is a potential for a screening programme to detect a cancer in a woman who might never have presented clinically before dying from another cause. Thus screening may increase morbidity while not reducing mortality.
CTFPHC (2001)	Negative effects of screening mammography • Radiation-induced carcinoma • Unnecessary biopsies (0.6 to 0.9% of cases in Sweden, 5 to 9% of cases in U.S.) • Psychological stress of call-back (40% of cases) • Additional x-ray films (3 to 13% of cases in Sweden, 56% of cases in U.S.) • Possible false reassurance or false positive results
BWH (2001)	False positives. Data indicates that over a 10-year period, the cumulative risk of a false positive mammogram is about 50%, and the rate of benign biopsy approaches 20%.
USPSTF (2002)	False positives. Similar to other cancer screening tests, the large majority (80 to 90%) of abnormal screening mammograms or CBEs are false-positives. These may require follow-up testing or invasive procedures such as breast biopsy to resolve the diagnosis and can result in anxiety, inconvenience, discomfort, and additional medical expenses. The consequences of false-positive mammograms are uncertain. Most, but not all, studies report increased anxiety from an abnormal mammogram. At the same time, some studies report that women in the United States may be willing to accept a relatively high number of false-positive results in the population in return for the benefits of mammography. Studies do not indicate that false-positive results diminish adherence to subsequent screening. False negatives. False-negatives also occur with mammograms and CBE. Although false-negative results might provide false reassurance, the USPSTF found no data indicating these led to further delays in diagnosis. Over-diagnosis and treatment. Some experts view the over-diagnosis and treatment of ductal carcinoma in situ (DCIS) as a potential adverse consequence of mammography. Although the natural history of DCIS is variable, many women in the United States are treated aggressively with mastectomy or lumpectomy and radiation. Given the dramatic increase in the incidence of DCIS in the past two decades (750%) and autopsy series suggesting that there is

	a significant pool of DCIS among women who die of other causes, screening may be increasing the number of women undergoing treatment for lesions that might not pose a threat to their health. Radiation risks. A final potential concern about mammography is radiation-induced breast cancer, but there are few data to directly assess this risk. A 1997 review, using risk estimates provided by the Biological Effects of Ionizing Radiation report of the National Academy of Sciences, estimated that annual mammography of 100,000 women for 10 consecutive years beginning at age 40 would result in up to 8 radiation-induced breast cancer deaths.
KP-SC (2003)	Mammography Women age 50 to 69: The positive predictive value of an abnormal screening mammogram is 10 to 15% for women over the age of 50 who have an average risk of breast cancer. It is estimated that approximately 24% of women who begin biennial screening mammography at age 50 will have at least one false-positive mammogram within a 10-year screening period. The sensitivity of screening mammography in women over 50 is approximately 90%. With this level of performance, 10% of women with breast cancer may be falsely reassured by a false-negative mammogram result.
ACOG (2003)	Mammography Initial concerns about the risk of radiation (e.g., induction of breast cancer by radiation) have largely been allayed by improvements in mammography technique, technology, and clinical experience. False-positive mammograms (i.e., those with perceived abnormalities requiring further evaluation to verify that the lesion is not cancer) are a continuing concern. False-positive screening mammograms require diagnostic mammography with supplementary views, ultrasonography, and even biopsy in 20 to 30% of cases in an attempt to reach an accurate diagnosis. BSE An analysis by the Canadian Task Force on Preventive Health Care revealed fair evidence that BSE had no benefit and good evidence that it was harmful. This group concluded that among women aged 40 to 69 years, routine teaching of BSE should be excluded from breast cancer screening. Increased physician visits and higher rates of benign breast biopsies were documented to be adverse effects of BSE. In addition, studies were cited that revealed patients experienced increased worry, anxiety, and depression associated with BSE.
ACS (2003)	Limitations and harms of breast cancer screening include false negatives, false positives, over-treatment, and radiation.

	False Negatives/False Positives False negatives can be attributed to inherent technological limitations of mammography, quality assurance failures, and human error; false positives also can be attributed to these factors as well as to heightened medical-legal concerns over the consequence of missed cancers. Further, in some instances, a patient's desire for definitive findings in the presence of a low-suspicion lesion also contributes to false positives. The consequences of these errors include missed cancers, with potentially worse prognosis, as well as anxiety and harms associated with interventions for benign or nonobligate precursor lesions. The evidence suggests that some women experience anxiety related to screening and a greater percentage experience anxiety related to false-positive results, but for most women psychological distress is short-lived and does not have lasting consequences on either stress levels or likelihood of subsequent screening. Overtreatment Since some ductal carcinoma in situ (DCIS) is not progressive, diagnostic evaluation and treatment of DCIS lesions that would not progress to invasive disease is a harm associated with screening, although the extent of harm is uncertain, as is how it might be avoided. Overtreatment of a progressive DCIS lesion that could be cured with less aggressive treatment also represents a harm, although it should not be attributed to screening. Radiation Several studies have provided evidence for an increased risk of breast cancer after therapeutic radiation exposure or multiple exposures to diagnostic radiation. Overall risk from single and cumulative diagnostic exposures is small, but risk increases with the amount of exposure and with younger age at exposure. Thus, it is theoretically possible that cumulative radiation exposure associated with screening mammography increases the risk of breast cancer. It has also been hypothesized that some women at increased inherited risk for breast cancer may also have increased radiation sensitivity, which could increase their risk for radiation-induced breast cancer. Women whose regular screening begins at an early age (e.g., age 30) may have a higher potential for radiation-induced cancers.

TABLE 4. EVIDENCE AND RECOMMENDATION RATING SCHEMES

RNZCGP (1999)	Levels of Evidence: I Evidence obtained from systematic review of all relevant randomised controlled trials (RCTs). II Evidence obtained from at least one properly designed RCT. III-1 Evidence obtained from well designed controlled trials without randomisation. III-2 Evidence obtained from well designed cohort or case controlled analytic studies, preferably from more than one centre or research group. III-3 Evidence obtained from multiple time-series with or without the intervention. Dramatic results in uncontrolled experiments such as the introduction of penicillin treatment in the 1940s could be regarded as this type of evidence. IV-1 Evidence from descriptive studies including case series, case reports and cross-sectional studies. IV-2 Published policies, recommendations or opinions of recognised experts, organisations, or learned colleagues. Including endorsement of Level IV-3 evidence by recognised bodies. IV-3 Consensus opinion of the working party not endorsed formally by recognised bodies. N/A Not applicable — not possible to apply a level of evidence.
CTFPHC (2001)	Levels of Evidence: I - Evidence from at least one properly randomized controlled trial. II-1 - Evidence from well-designed controlled trials without randomization. II-2 - Evidence from well-designed cohort or case-control analytic studies, preferably from more than one centre or research group. II-3 - Evidence from comparisons between times or places with or without the intervention. Dramatic results from uncontrolled experiments could also be included here. III - Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

	Grades of recommendations: A - Good evidence to support the recommendation that the condition or maneuver be specifically considered in a periodic health examination B - Fair evidence to support the recommendation that the condition or maneuver be specifically considered in a periodic health examination C - Insufficient evidence regarding inclusion of the condition or maneuver in, or its exclusion from, a periodic health examination, but recommendations may be made on other grounds D - Fair evidence to support the recommendation that the condition or maneuver be specifically excluded from a periodic health examination E - Good evidence to support the recommendation that the condition or maneuver be specifically excluded from a periodic health examination
USPSTF (2002)	USPSTF grades the quality of the overall evidence on a 3-point scale (good, fair, or 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 evidence on health outcomes. Poor Evidence is insufficient to assess the effects on health outcomes because of limited number of power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes. The USPSTF grades its recommendations according to one of five classifications (A, B, C, D, or 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 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 it 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.)
ACOG (2003)	Levels of Evidence: Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force. I Evidence obtained from at least one properly designed randomized controlled trial. II-1 Evidence obtained from well-designed controlled trials without randomization. II-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group. II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence. III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees. Grades of Recommendations: Level A - Recommendations are based on good and consistent

	scientific evidence. Level B - Recommendations are based primarily on consensus and expert opinion. Level C - Recommendations are based primarily on consensus and expert opinion.

GUIDELINE CONTENT COMPARISON

The Royal New Zealand College of General Practitioners (RNZCGP), the Canadian Task Force on Preventive Health Care (CTFPHC), Brigham and Women's Hospital (BWH), the U.S. Preventive Services Task Force (USPSTF), Kaiser Permanente-Southern California (KP-SC), the American College of Obstetricians and Gynecologists (ACOG), and the American Cancer Society (ACS) present recommendations for screening mammography for breast cancer based on evidence available at the time of each report and provide explicit reasoning behind their judgments. CTFPHC's guideline update on screening mammography limits its recommendations to women aged 40 to 49 years at average risk of breast cancer. The guidelines also evaluate other screening interventions for breast cancer, such as teaching breast self-examination in the periodic health examination and clinical breast examination. The RNZCGP guideline also provides recommendations for assessing risk factors for breast cancer and for diagnostic investigations in symptomatic women. In addition, RNZCGP provides recommendations for clinical considerations for the Maori population of New Zealand. The guideline from BWH differs from the others in that it includes recommendations and an algorithm for managing benign breast symptoms such as mastalgia. The BWH algorithm also attempts to delineate the various roles of the primary care provider, the Breast Center, and the breast surgeon in the care of the woman with breast disease. ACOG also provides recommendations for the evaluation of palpable and nonpalpable masses and referral for management and genetic counseling. The ACS guideline, while primarily focused on breast cancer screening using traditional methods, also examines new screening technologies as well as issues pertinent to screening older women and high-risk women.

Areas of Agreement

Mammographic Screening for Women Aged 50 to 69 Years

BWH, RNZCGP, USPSTF, ACOG, KP-SC, and ACS agree that routine screening mammography is indicated in women aged 50 to 69. Both BWH and ACS endorse annual screening, while USPSTF recommends either annual or biennial screening, and RNZCGP and KP-SC recommend biennial screening. ACOG recommends annual screening for all women aged 50 years and older. CTFPHC does not offer recommendations for this age group in its 2001 guideline update.

Screening of Women with Selected Risk Factors for Breast Cancer

There is general agreement between RNZCGP, USPSTF, and KP-SC concerning the value of annual screening in high-risk women. RNZCGP recommends that women over age 40 at high risk for breast cancer should receive annual mammographic screening. USPSTF states that the recommendation for women to begin routine screening in their 40s is "strengthened by a family history of breast cancer having been diagnosed before menopause." KP-SC likewise recommends annual mammography screening for women with selected risk factors (See table 2 above for specific risk factors).

While ACS recommends annual screening of all women beginning at age 40, it also states that high-risk women might benefit from additional screening strategies. These strategies could include initiation of screening at age 30 years or younger, shorter mammographic screening intervals (e.g., every six months), and the addition of magnetic resonance imaging or ultrasound screening. ACS cautions, however, that there is insufficient evidence to justify recommending these options in high-risk women, and it emphasizes the need for further clinical data on screening women at increased risk.

Although ACOG makes no formal recommendations for or against screening in high-risk populations, they do provide a brief discussion of factors that increase the relative risk for breast cancer in women, acknowledging that the incidence of breast cancer increases with age and that a personal history of breast cancer, either invasive or in situ, is a clinically meaningful risk factor. They further note however, that an Evidence Report commissioned by the Agency for Healthcare Research and Quality (AHRQ) (Diagnosis and management of specific breast abnormalities. Rockville [MD]: AHRQ. 2001. [Evidence Report/Technology Assessment; no. 33] AHRQ Publication No. 00-E046) recommends against modifying the workup on the basis of risk factors other than age. Additionally, ACOG refers to provisional recommendations from the Cancer Genetics Studies Consortium that recommends "education regarding monthly breast self examination, annual or semiannual clinical breast examination beginning at age 25-35 years, and annual mammography beginning at age 25-35 years" for women who carry the BRCA1 or BRCA2 mutation.

Mammographic Screening of Older Women ($\geq$70 years)

The five organizations (RNZCGP, ACOG, KP-SC, ACS, and USPSTF) that address this older population group generally agree that there is no clear age at which mammographic screening should be discontinued. Rather, the decision to screen should be made on an individual basis, taking into account personal preferences and weighing individual risks and benefits.

Areas of Differences

Mammographic Screening of Women Aged 40 to 49 Years at Average Risk of Breast Cancer

The value of routine screening of women aged 40 to 49 years at average risk of breast cancer is an area of controversy among the guideline groups. Much of the controversy is due to the quality and interpretation of clinical trial data regarding mortality benefits of mammographic screening.

ACS and BWH recommend routine annual mammographic screening, while USPSTF and ACOG recommend annual or biennial screening in this age group. The groups acknowledge that the evidence for absolute benefit from screening of women younger than 50 years is weaker than the evidence for older women; however, a mortality benefit for women aged 40 to 49 has still been shown in some clinical trials. USPSTF's most recent (2002) recommendation concerning routine mammographic screening for women younger than age 50 is a change from its 1996 guideline, which found insufficient evidence to recommend for or against screening in this age group. The USPSTF has reviewed seven randomized controlled trials (RCTs) enrolling women aged 40 to 49, six of which were at least of "fair" quality. One of the trials was designed to specifically address benefits of screening in this age group and reported no reduction in breast cancer mortality with annual mammography and clinical breast examination. Of the remaining five trials, one reported significant mortality reductions, three reported non-significant mortality reductions, and one found no benefit. A meta-analysis pooling the results for women aged 40 to 49 in these six trials showed that the relative risk for breast cancer mortality was 0.85 (95% confidence interval 0.73-0.99) among screened women after 13 years of observation. These results are similar to prior meta-analyses based on older data. On average, the time until mortality benefits began to be observed was longer in women under 50 years than in older women. The analysis suggests that at least some of the mortality reduction was due to early detection of tumors before age 50.

Like USPSTF, ACOG recommends annual or biennial screening in women aged 40 to 49 years, noting that current data do not clearly support a recommendation as to whether mammography annually or every 2 years is superior. ACOG notes that the variability of the design, technology, methodology, interpretation, and endpoints of most of the trials does not permit meaningful comparisons.

ACS cites updates in the evidence from a number of individual RCTs of breast cancer screening and meta-analyses of these data, including the current (2002) USPSTF meta-analysis to justify their recommendation for annual screening in women beginning at age 40 years. In addition, ACS presents evidence from service screening (i.e., screening in the community setting), which appears to show mortality reductions similar to those seen in randomized controlled trials.

CTFPHC's current (2001) recommendation for screening mammography in the 40 to 49 age group was modified from the 1999 version that recommended exclusion of women in this age group from screening mammography during the periodic health examination. The updated version neither recommends the inclusion of the maneuver in, or its exclusion from, the periodic health examination. This recommendation change is based on conflicting evidence regarding the benefits of screening women in this age group. CTFPHC cites the Canadian National Breast Screening Study, which did not show a reduction in mortality among women aged 40 to 49, and the two Swedish trials, which showed a statistically significant benefit of screening mammography in subgroup analyses. CTFPHC states that the most recent meta-analyses of 7 randomized controlled trials showed conflicting results. In one analysis, which included all 7 trials, a statistically significant relative risk reduction of 18% was shown, but a second analysis of only 2 trials found no effect.

RNZCGP also does not recommend routine screening for this age group because of the methodological problems in published studies. RNZCGP, however, does cite various meta-analyses showing mortality reductions ranging from 18 to 29% to 10% with screening mammography in women aged 40 to 49.

Although KP-SC does not explicitly recommend routine screening for this age group, the group recommends that these women be informed of the benefits and harms of mammography and be "offered screening at least every two years." The two-year screening interval is based on evidence that annual screening is no more effective than biennial screening. This current recommendation (2003) does not differ from the group's 2001 recommendation. KP-SC acknowledges that conflicting results from various meta-analyses make it difficult to draw a definitive conclusion regarding the potential benefits and harms of mammography screening in women aged 40 to 49 years. Furthermore, the results of meta-analyses vary widely based on the number of trials included and the statistical models used. Results from different meta-analyses found a trend toward a 15% relative reduction in mortality risk in screened vs. unscreened women; however, results of six of the nine meta-analyses did not reach statistical significance. It is estimated that nearly 30% of women who begin biennial screening mammography at age 40 will have at least one false-positive mammogram by age 49, and 20 to 25% will have a false-negative mammogram, which may contribute to unnecessary biopsies, pain, discomfort, and increased costs.

Clinical Breast Examination (CBE)

There are some differences in the recommendations offered by RNZCGP, BWH, USPSTF, ACOG, KP-SC, and ACS concerning CBE as a breast cancer screening measure. The differences stem chiefly from the lack of firm evidence that CBE alone reduces breast cancer mortality and from the perceived value of CBE in detecting palpable tumors.

Neither RNZCGP nor USPSTF recommends the use of CBE alone for breast cancer screening. RNZCGP recommends that CBE be used in conjunction with mammography, since mammography is more sensitive than CBE alone in screening asymptomatic women, but the sensitivity of both combined is greater than either alone. RNZCGP also states that tumors detected by CBE tend to be larger than those detected by mammography, which has a bearing on mortality. The additional effect of CBE on reducing breast cancer mortality beyond the benefit of mammography alone is therefore uncertain.

USPSTF and KP-SC state that there is insufficient evidence to recommend for or against routine CBE alone to screen for breast cancer. USPSTF cites evidence that reductions in breast cancer mortality in studies using mammography alone are comparable to those using mammography plus CBE. KP-SC indicates that studies could not determine the benefits of CBE alone or the incremental benefit of adding CBE to mammography. No studies have been done comparing CBE alone to no screening.

ACS and BWH, on the other hand, both recommend CBE in all women over age 20. Similarly, ACOG recommends clinical breast examination annually, perhaps with the annual physical examination, but provides no age ranges. ACS recommends that CBE be performed at least every three years for women in their

20's and 30's and annually beginning at age 40, whereas BWH recommends that it be done annually beginning at age 20. While BWH does not provide evidence for its recommendation, ACS and ACOG present a detailed discussion of available data. ACS concludes (based on weak and indirect evidence) that the contribution of CBE to breast cancer detection in asymptomatic women is small, especially in view of the high-quality mammography available today. They note, however, that when done prior to mammography, CBE may identify an area of suspicion and/or help guide subsequent imaging exams. They further note that as the proportion of women receiving regular mammograms increases, the relative contribution of CBE to early breast cancer detection and its cost-effectiveness warrant renewed attention. ACS still recommends periodic CBE, however, in part because the exam may provide the opportunity for clinicians to educate patients on breast cancer-related topics, including screening mammography. ACS also notes that its expert panel was divided in continuing to recommend periodic CBE, with some members believing that the evidence against the benefit of CBE was not strong enough to abandon the recommendation and others advocating elimination of the recommendation because is was not evidence-based.

ACOG cited a review in which pooled data for all controlled trials and case-control studies involving CBE demonstrated a sensitivity of 54% and a specificity of 94% for CBE screening. Although the evidence was indirect, the review supported the use and effectiveness of clinical breast examination. ACOG also cites multiple reviews that have supported the combination of clinical breast examination and mammography for breast cancer screening. ACOG acknowledges that studies of efficacy have looked only at annual clinical breast examination and at no other time intervals; therefore, ACOG recommends annual CBE screening.

Breast Self-examination (BSE)

Although all of the groups have reservations about the value of BSE, they differ somewhat in their final recommendations to patients and health care providers.

There is general agreement on the lack of a clear benefit for breast self-examination (BSE) as a screening measure for breast cancer. CTFPHC maintains there is fair evidence of no benefit and good evidence of harm in teaching BSE to women aged 50 to 69 years and in women aged 40 to 49 years. CTFPHC was unable to make a recommendation for older women ($\geq$70 years) and younger women (<40 years) because of insufficient evidence. This current (2001) statement was a modification of a previous (1999) recommendation that there was insufficient evidence to make a recommendation for or against teaching of BSE. In making this revision, CTFPHC specifically cites evidence from randomized controlled trials that showed an increase in the number of physician visits for evaluation of benign breast biopsies in women who were taught BSE.

USPSTF concludes that there is insufficient evidence to recommend for or against teaching or performing BSE in any age group. USPSTF states that the accuracy of BSE is largely unknown, and that the available evidence shows a sensitivity of only 26 to 41% compared with clinical breast examination and mammography.

RNZCGP also does not recommend routine BSE because of a lack of evidence of clear benefit, although it does state that women should be advised to report any breast changes that they detect themselves to their physicians. In addition,

RNZCGP advises women to "regularly look and feel for breast changes rather than follow a systematic method of examination."

While acknowledging that randomized controlled trials have found no mortality benefit from monthly BSE, BWH does not recommend either for against its use as a screening method. BWH, however, also recognizes that many physicians will continue to recommend BSE because it is relatively inexpensive and noninvasive. The guideline's general conclusion is that patients can rely on annual CBE and screening mammography if they find BSE to be anxiety-provoking.

KP-SC recommends that women be informed of the lack of benefit and the potential harms of BSE but warn that all women should be counseled to seek immediate medical attention upon detection of a breast lump. Although an estimated 45% of breast cancer patients detect their own breast lumps, there is no evidence to demonstrate that this estimate is due to routine BSE or that BSE decreases mortality from breast cancer. Specifically, a meta-analysis of two large randomized controlled trials demonstrated no significant difference in the relative risk of mortality in women performing BSE vs. those not performing BSE.

Despite the fact that ACOG recognizes the lack of definitive data for or against BSE, the group states that BSE has the potential to detect palpable breast cancer and therefore recommends it.

Among all the guideline groups, ACS makes the strongest recommendation in favor of BSE, even though they acknowledge the absence of definitive randomized clinical trial data from which to draw conclusions. Their recommendation is derived from expert opinion, which in turn is based on population-based studies showing that many breast cancers are self-detected. Earlier detection of palpable masses, they reason, can lead to earlier treatment in average-risk women under age 40. ACS also emphasizes that BSE heightens awareness of women to normal breast tissue, which makes it more likely for them to detect changes from normal. Thus, ACS advocates BSE instruction for women beginning in their 20s, with the dual provisos that women be told of both its benefits and limitations, and that it is acceptable for women not to perform BSE. Women should be advised to report any new breast symptoms promptly to their health care provider. Finally, as with CBE, the ACS guideline panel was divided on whether to abandon the recommendation for BSE because of the lack of sufficient evidence.

This Guideline Synthesis was prepared by ECRI on December 28, 1998. It was reviewed and verified by the guideline developers as of February 19, 1999. This Synthesis was subsequently modified by ECRI in 2001, 2002, 2003, and 2004. The most current version of this Synthesis incorporates ACOG recommendations and the 2003 updated recommendations from KP-SC.

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