

Clinical Watch

FROM CSAC, THE CLINICAL AND SCIENTIFIC AFFAIRS COUNCIL OF THE AAPA

MAMMOGRAPHY

Screening in women 40 to 49 years old

Who should read this?

Physician assistants providing medical care for women in their fifth decade of life.

Why is this important?

The optimal age to begin breast cancer screening with mammography is controversial. Over the past 20 years, federal agencies and professional organizations have released a variety of recommendations addressing the topic.¹ The controversy exists at least in part because mammography in women aged 40 to 49 years is less beneficial than it is in older women.^{2,3} The issue is important because breast cancer is the second most common cancer in women and the second leading cause of cancer deaths in women in the United States. The American Cancer Society estimates that in 2007, there will be 178,480 new cases of breast cancer and 40,460 breast cancer-related deaths in women.⁴ The risk of developing breast cancer increases with advancing age. Cancer surveillance data indicate that 1.4% of 40-year-old women will develop breast cancer in the next 10 years compared to 4.0% of 70-year-old women.⁵

What's new?

In April 2007, the American College of Physicians (ACP) released clinical practice guidelines to increase clinicians'

understanding of the risks and benefits of screening mammography for women aged 40 to 49 years.³ The guidelines emphasize an individualized approach to help women make informed decisions about when to begin mammography. The recommendations are based on a systematic review of studies that examined the impact of mammography on breast cancer mortality in 40- to 49-year-old women.

What's important?

ACP's guidelines focus on the discussion between the patient and clinician. ACP recommends the following:³

1. **Clinicians should perform an individualized assessment of risk for breast cancer to help guide decisions about screening mammography.** Risk factors for breast cancer are well-described^{3,6} (see Tables 1 and 2, page 18). A tool found on the National Cancer Institute's Web site (www.cancer.gov/bcrisktool/) predicts the cumulative risk of breast cancer using the listed risk factors. This tool, based on the Gail model,⁷ accurately estimates both the 5-year and lifetime

TAKE-HOME POINTS

- Women aged 40 to 49 years should know their estimated risk for breast cancer. A breast cancer risk assessment tool is available to help PAs calculate a woman's risk.
- PAs should use a patient-centered approach when discussing the benefits and harms of screening mammography.
- Factors such as family history and presence of genetic mutation may help identify women at increased risk of breast cancer. However, most women who receive a diagnosis of breast cancer do not have these risk factors.
- Recommendations for screening in women aged 40 to 49 years vary between organizations' guidelines.

risk of breast cancer for groups of women with specific risk factors. However, it cannot precisely predict which women will develop breast cancer. When counseling a patient using the results of population-based studies such as the Gail model, PAs should assess the patient's individual disease risk and have an ongoing discussion with the patient.

2. **Clinicians should inform women in this age group about the potential benefits and harms of screening mammography.** ACP's evidence review shows that early detection is the most important benefit of screening mammography in women younger than 50 years. Earlier diagnosis can mean less aggressive treatment, more therapeutic options, and, ultimately, a decrease in breast cancer mortality. The risks of screening include discomfort with the mammography procedure, false-positive results, biopsies for abnormalities that are ultimately proven to be negative, patient anxiety during a period of uncertainty, false-negative results with false reassurance when the patient does indeed have breast cancer, overdiagnosis, and excess radiation exposure.^{2,8-10}
3. **Clinicians should base screening mammography decisions on the benefits and harms of screening, as well as on a woman's preferences and breast cancer risk profile.** A personalized strategy based on a woman's risk profile will help PAs identify those who will most benefit from screening and the age when screen-

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ing mammography should begin. Women at higher risk will gain more benefit from beginning screening earlier, whereas women at lower risk will obtain less benefit. PAs should seek to understand and be guided by a woman's concerns with mammography and the effects it will have on her quality of life.¹¹ If, after reviewing the benefits and harms of screening mammography, a woman chooses not to be screened, the clinician should re-address the issue and re-evaluate her risk every 1 to 2 years.³

What else is important to know?

Many organizations recommend screening mammography starting at age 40 years, with a screening interval of 1 to 2 years. It is worth discussing these other recommendations in the context of ACP's guidelines to help women make informed decisions about mammography.

- The American Cancer Society guidelines recommend annual mammography starting at age 40 years in combination with annual clinical breast examination.
- The American College of Obstetricians and Gynecologists recommends that women have screening mammography every 1 to 2 years from ages 40 to 49 years and then annually beginning at age 50.
- The US Preventive Services Task Force recommends that screening mammography be done every 1 to 2 years in women aged 40 years and older with or without a clinical breast examination.
- The American Academy of Family Physicians recommends mammography every 1 to 2 years in women aged 50 to 69 years; women aged 40 to 49 years should be counseled on the potential risks and benefits of mammography and clinical breast examination.
- The Canadian Task Force on Preventive Health Care found insufficient evidence to recommend for or against

TABLE 1. Risk factors for breast cancer

Risk factor	Relative risk
Age (>50 y vs. ≤50 y)	6.5
Family history of breast cancer	
• First-degree relative	1.4-13.6
• Second-degree relative	1.5-1.8
Early menarche (<12 y vs. >14 y)	1.2-1.5
Age at first full-term pregnancy (>30 y vs. <20 y)	1.3-2.2
History of breast biopsies (either positive or negative)	1.5-1.8
At least one breast biopsy with atypical hyperplasia	4.0-4.4
Hormone replacement therapy	1.0-1.5

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TABLE 2: Breast cancer risk factors for women aged 40 to 49 years

One first-degree relative with breast cancer and one previous breast biopsy
Presence of BRCA1 or BRCA2 mutations
Previous diagnosis of breast cancer
Previous diagnosis of ductal or lobular carcinoma in situ
Previous high-dose chest radiation
Two first-degree relatives with breast cancer (mother, sister, or daughter)
Two previous breast biopsies

Data from Qasseem S et al.³

screening mammography for women aged 40 to 49 years. They recommend that Canadian women be informed of the potential benefits and risks of screening mammography and be assisted in deciding at what age to initiate the screening. [JAAPA](#)

REFERENCES

1. Ernster VL. Mammography screening for women aged 40 through 49—a guidelines saga and a clarion call for informed decision making. *Am J Public Health.* 1997;87(7):1103-1106.
2. US Preventive Service Task Force. Screening for breast cancer. Recommendations and rationale. AHRQ Pub. No. 03-507A. August 2002. Agency for Healthcare Research and Quality Web site. <http://www.ahrq.gov/clinic/3rduspstf/breastcancer/brcanrr.pdf>. Accessed October 2, 2007.
3. Qasseem S, Snow V, Sherif K, et al. Screening mammography for women 40 to 49 years of age: a clinical practice guideline from the American College of Physicians. *Ann Intern Med.* 2007;146(7):511-515.
4. Estimated new cancer cases and deaths by sex for all sites, US, 2007. American Cancer Society Web site. <http://www.cancer.org/downloads/stt/CFF2007EstCsDths07.pdf>. Accessed October 2, 2007.
5. Risk of breast cancer by age. Centers for Disease Control and Prevention Web site. <http://www.cdc.gov/cancer/breast/statistics/age.htm>. Accessed October 2, 2007.
6. American Cancer Society. Breast cancer facts and figures, 2005-2006. <http://www.cancer.org/downloads/STT/CAFF2005BrF.pdf>. Accessed October 2, 2007.
7. Gail MH, Brinton LA, Bryar DP, et al. Projecting individualized probabilities of developing breast cancer for white females who are being examined annually. *J Natl Cancer Inst.* 1989; 81(24):1879-1886.
8. Smith RA, Cokkinides V, Eyre HJ. American Cancer Society guidelines for the early detection of cancer, 2006. *Ca Cancer J Clin.* 2006;56(1):11-25.
9. Brewer NT, Salz T, Lillie SE. Systematic review: the long-term effects of false-positive mammograms. *Ann Intern Med.* 2007;146(7):502-510.
10. Armstrong K, Moye E, Williams S, et al. Screening mammography in women 40 to 49 years of age: a systematic review for the American College of Physicians. *Ann Intern Med.* 2007;146(7):516-526.
11. Armstrong K, Eisen A, Weber B. Assessing the risk of breast cancer. *N Engl J Med.* 2000;342(8):564-571.