



Therese B. Bevers, MD

Terry Bevers, MD, joined The University of Texas M. D. Anderson Cancer Center and was appointed Medical Director of Clinical Cancer Prevention in 1996. In this role, she has overseen the growth and program development of the Cancer Prevention Center, the first comprehensive clinical cancer prevention service program in the country.

Her clinical and research interests are in the area of breast cancer prevention, screening, and diagnosis. She has been an investigator in the Breast Cancer Prevention Trial, which demonstrated that tamoxifen reduced the risk of developing breast cancer by one half, and the STAR trial, which showed that raloxifene had similar benefits but fewer risks. She is currently involved in a phase I study of polyphenon E, an active substance of green tea. Dr. Bevers chairs the National Comprehensive Cancer Network's guideline panels on Breast Cancer Screening and Diagnosis and Breast Cancer Risk Reduction.

Dr. Bevers graduated from The University of Texas Health Science Center at San Antonio medical school in 1987. In 2006, she was named the recipient of the Ben and Julie Rogers' Award for Excellence in Prevention. Additionally, she was recognized as an America's Top Doctor in 2009. Dr. Bevers serves on the Board of Directors of the American Cancer Society, High Plains Division, and the National Adjuvant Surgical Breast and Bowel Project.

The ideas and viewpoints expressed in this commentary are those of the author and do not necessarily represent any policy, position, or program of the NCCN.

Breast Awareness: A Shift in the Paradigm of Breast Self-Examination

Breast self-examination (BSE) has long been considered by many to be an opportunity for women to self-detect breast masses that may develop between screening sessions. The premise is that women who detect interval cancers and present earlier than their scheduled screening are more likely to be diagnosed with an earlier stage breast cancer. Using BSE for screening has long held a strong intuitive appeal for women, and it has been advocated and widely promoted for many years by various medical societies, breast cancer advocacy groups, and the media as an effective screening tool. BSE has been an integral part of breast cancer screening recommendations for many years.

Although BSE was first presented in the 1930s as a tool in the early detection of breast cancer, studies evaluating its effectiveness were not published until the late 1970s. Since then, numerous observational, cohort, case control, and non-randomized community studies provided conflicting results regarding the benefit of BSE on the stage of disease at diagnosis and breast cancer mortality.¹

We now have 2 randomized trials that have investigated the risks and benefits of BSE. The first randomized trial of BSE was begun in 1985 in Leningrad (now St. Petersburg) and Moscow.² After approximately 13 years, the number of breast cancers was similar in the BSE and non-BSE groups, and no difference in mortality was seen (relative risk [RR], 1.07; 95% confidence interval [CI], 0.86–1.34). Additionally, breast cancer was not diagnosed at a smaller size or at a less advanced stage in the women in the BSE arm. The BSE group had a higher number of excisional biopsies for benign lesions. However, these findings were significantly compromised by lack of compliance with the intervention in the BSE group, which precluded any effect on BSE recommendations or practice.

A study in Shanghai by Thomas et al.,³ which was a randomized, controlled trial assessing the benefit of BSE instruction, represents a landmark investigation in breast cancer screening. The findings, published in 2002 after 10 to 11 years of follow-up, showed no reduced mortality from breast cancer in women who received BSE instruction compared with women who did not (RR, 1.04; 95% CI, 0.82–1.33; $P = .72$).

In this study, 135 (0.10%) breast cancer deaths occurred in the instruction group and 131 (0.10%) in the control group, and survival in the instruction group was 95.2% (95% CI, 95.1–95.3) compared with 94.9% (95% CI, 94.7–95.0) in the control group ($P < .001$). Furthermore, the cancers were not smaller in size, and no apparent shift in breast cancer stage was detected between the groups. However, the authors note a substantial increase in detection of benign breast lesions (false-positives), resulting in significantly more breast biopsies.

False-positive results can incur considerable costs and risks. In the randomized trials, women performing BSE were much more likely to undergo unnecessary breast biopsies. Additionally, the anxiety associated with the diagnostic evaluation of a breast abnormality can be significant. An additional risk of false-positive findings is the false reassurance it provides to some women for future BSE findings after one or more negative work-ups.

To (Recommend) BSE or Not to BSE

An important consideration of BSE is the difference between chance detection of breast abnormalities during routine activity versus those detected during a formal BSE. Many clinicians find that most women who present with a palpable breast mass

Breast Awareness: A Shift in the Paradigm of Breast Self-Examination

found it by chance and not during BSE; however, virtually none of the reported studies distinguished the method of self-detection. In addition, many women report they do not practice BSE because they “don’t know how to do it”. Clearly, the process has been made so complex that some women feel intimidated.

In 2001, the Canadian Task Force on Preventive Health Care recommended that routine teaching of BSE be excluded from the periodic health examination of women aged 40 to 69 years.⁴ In 2002, the United States Preventive Services Task Force updated their recommendations, concluding that the evidence is insufficient to recommend for or against teaching or performing routine BSE.⁵ The American Cancer Society (ACS) recommends that women know how their breasts normally feel and report any change promptly to a health care provider. BSE is an option for women starting at age 20.⁶

Whether to recommend BSE is an emotionally charged topic. Many women can identify someone who “found her breast cancer on self-exam.” An important point to remember, however, is that, as seen in the Shanghai trial, women are no less likely to find a breast mass if they have not been trained in BSE than if they have undergone formal training. Women not trained in BSE will still find breast masses, some of which are cancer.

Conclusions

Although long a part of the breast cancer screening triad, BSE has been, to a significant extent, more a means of involving women in their own breast health than a screening test of proven benefit. Some have suggested that increased awareness rather than actual skill at BSE is the reason for the smaller breast masses that women have detected themselves over the past several decades.

Now, with results from randomized trials on whether BSE affects breast cancer mortality, the role of BSE in breast health has been re-evaluated. In the new NCCN Clinical Practice Guidelines in Oncology on Breast Cancer Screening and Diagnostics published in this issue, the panel has shifted from the previous recommendation of BSE (which was an optional screening modality) to one of breast awareness. Specifically, the guidelines state, “Women should be familiar with their breasts and promptly report changes to their health care provider.” The guidelines note that periodic, consistent BSE may facilitate breast self-awareness.

It is vital for women to remain involved in their own breast health. They are the most likely person to identify a breast change. This paradigm shift is actually recognition of that while simplifying and demystifying the process.

References

1. Bevers T. Breast Self-examination. In: Singletary SE, Robb GL, Hortobagyi GN, eds. *Advanced Therapy of Breast Disease*. 2nd ed. New York: B.C. Decker, Inc; 2004:193–201.
2. Semiglazov VF, Moiseyenko VM, Manikhas AG, et al. Role of breast self-examination in early detection of breast cancer: Russian/WHO prospective randomized trial in St. Petersburg. *Cancer Strategy* 1999;1:145–151.
3. Thomas DB, Gao DL, Ray RM, et al. Randomized trial of breast self-examination in Shanghai: final results. *J Natl Cancer Inst* 2002;94:1445–1457.
4. Baxter N. Preventive health care, 2001 update: should women be routinely taught breast self-examination to screen for breast cancer? *Can Med Assoc J* 2001;164:1837–1845.
5. U.S. Preventive Services Task Force. *Screening for Breast Cancer*. Agency for Healthcare Research and Quality, Rockville, MD. February 2002. Available at <http://www.ahrq.gov/clinic/3rduspstf/breastcancer/>. Accessed October 2009.
6. Smith RA, Saslow D, Sawyer KA, et al. American cancer society guidelines for breast cancer screening: update 2003. *CA Cancer J Clin* 2003;53:141–169.