

## Is it time to stop teaching breast self-examination?

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**B**reast self-examination (BSE) is a patient-centred, inexpensive and noninvasive method of screening for breast cancer. In North America most women are aware of BSE, and about one-third perform the examination regularly.<sup>1</sup> The majority of primary care physicians report either teaching BSE to their patients or referring them to other health care providers for teaching.<sup>2-4</sup> Physicians value BSE and want training on how to teach it.<sup>2</sup> In fact, a survey of family physicians found that physicians rated BSE as a more effective screening tool than clinical breast examination.<sup>3</sup> Over the last 30 years BSE has been recommended by leading cancer organizations, such as the National Cancer Institute and the American Cancer Society.

A 1987 systematic review for the US Preventive Services Task Force found insufficient evidence to recommend BSE as a breast cancer screening tool.<sup>1</sup> The Canadian Task Force on the Periodic Health Examination (now the Canadian Task Force on Preventive Health Care) came to a similar conclusion in 1994, giving BSE a grade C recommendation (insufficient evidence to recommend for or against screening).<sup>5</sup> The US task force again gave BSE a C recommendation in 1996.<sup>6</sup>

With emerging data, particularly from the randomized controlled trials (RCTs) in China<sup>7</sup> and Russia,<sup>8,9</sup> some groups have become more skeptical about the effectiveness of BSE, and several organizations, including the National Cancer Institute and the American Cancer Society, are now more cautious in recommending BSE as a screening tool.<sup>10</sup> The systematic review by Nancy Baxter and the Canadian Task Force on Preventive Health Care in this issue (page 1837)<sup>11</sup> goes even further. The task force concludes that "because there is fair evidence of no benefit, and good evidence of harm," routine teaching of BSE should not be included in the periodic health examination of women aged 40-69 (grade D recommendation). In its thorough and well-written evaluation of the current data, the task force reviews the 2 RCTs in China and Russia, a nonrandomized controlled trial in the United Kingdom,<sup>12</sup> 3 case-control studies,<sup>13-15</sup> 1 of which was nested in the Canadian National Breast Screening Study,<sup>13</sup> and 2 cohort studies.<sup>16,17</sup>

The Chinese trial is the best-designed BSE study to date, with standardized and individualized BSE teaching, good compliance by participants and thorough follow-up. After 5 years of follow-up, this RCT, involving 267 040 women aged 31-64, showed no benefit of BSE in reducing breast cancer mortality (30.9 v. 32.7 per 100 000 woman-

years in the BSE and control groups respectively). However, these results must be interpreted with caution because they are based on only 5 years of follow-up and only 25 breast cancer deaths in each arm, including prevalent cases. When screening for cancer, the harms are generally apparent before the benefits. Had we reached conclusions on the effectiveness of screening mammography or colorectal cancer screening after 5 years, we would have declared that screening was detrimental because the mortality benefits were not yet clear but the excess work-ups for false-positive results were already apparent. In addition, because BSE is unlikely to make any difference on prevalent cases, the deaths from breast cancer diagnosed during the first few years of the study may not be informative.

Unlike the Chinese trial, the Russian study is handicapped by a lack of individual teaching of BSE, design problems and poor compliance with BSE. It does not have the power to show significant differences between the BSE and usual care.

The task force rightly evaluated possible harms of BSE. In both RCTs, more women in the BSE than in the control group sought medical attention and had evaluations for benign lesions. Since the rates of breast cancer in China and Russia are lower than the rates in North America,<sup>18</sup> false-positive rates with BSE would likely be higher in those countries. However, a more important issue may be that, in North America, the standard of care is to use BSE as part of a breast cancer screening triad that includes mammography and clinical breast examination. We question whether the false-positive findings with BSE would be similarly high in countries that use concomitant screening methods. In our own clinical setting, where a high proportion of patients underwent screening clinical breast examinations, mammography and BSE teaching, we found that among 2400 women followed for 10 years, 196 patient-identified breast masses (either by BSE or accidentally), 402 clinical breast examinations and 631 mammograms led to additional evaluation.<sup>19</sup> Previous BSE instruction was documented much less frequently for women who presented with breast symptoms than for women without breast symptoms (31% v. 64%,  $p = 0.001$ ).<sup>20</sup> These findings suggest that false-positive rates in North America, particularly when BSE is coupled with clinical breast examinations and mammography, may be considerably lower than those seen in the Chinese and Russian trials.

The results of the Chinese and Russian trials may not be

directly applicable to North America because of possible differences in treatment. Although hormone therapy, radiation therapy, surgery, chemotherapy and herbal therapies were used alone or in various combinations in the 2 trials, doses and regimens were not clearly stated. Whether these therapies would be considered to be effective by North American standards is uncertain. Applying an ineffective treatment would nullify any differences in outcomes that might have resulted from BSE screening.

As the task force points out, evidence from other studies was weaker. The Canadian National Breast Screening Study showed that rates of death and advanced breast cancer were increased among women who omitted 3 key elements of BSE at 2 years before diagnosis. No differences in outcomes were found when BSE was performed at 1 or 3 years before diagnosis.<sup>13</sup> This case-control study nested in a randomized trial eliminated potential biases; however, the implications of the post hoc analyses and these somewhat inconsistent findings are unclear. No conclusions can be drawn from the nonrandomized trial in the United Kingdom because of differences in BSE teaching and breast cancer treatment in the 2 study districts.<sup>12</sup> The observational studies have shown mixed results.

In summary, we agree with the task force that there is still not much evidence BSE helps and that there is more evidence it can harm. Is it time, therefore, to tell patients that BSE should not be practised? In making this decision, we must consider the effect of eliminating a widely practised procedure. For over 30 years many women have grown to accept BSE as a screening tool for breast cancer. They have become comfortable with examining their breasts and have gained a sense of control over their health care. How will women react to a sudden reversal in medical advice about BSE? How will it affect their reaction to medical advice about other screening methods for breast cancer?

The original report from the Canadian Task Force on the Periodic Health Examination stated that "when the evidence was inadequate we judged it best to err in the direction of prudence. The general guidelines used by the task force in making class C recommendations were to ... seek to minimize harm ... when withdrawing a currently used maneuver," and "advocat[e] major changes to accepted practice only on strong substantiation of the need for such change."<sup>21</sup> Does the current evidence about BSE meet this standard? Our own sense is that 5 years of follow-up from the best study available is too short a time to move from a grade C to a grade D recommendation. In screening, good science takes time.

Meanwhile, clinicians have much stronger evidence for mammography and well-done clinical breast examination, and we should emphasize these screening methods with our patients. For BSE, we must honestly share the uncertainties about its potential benefits and harms and then help patients in their decisions about its use.

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