

FROM THE EXPERTS

Elizabeth Wende Breast Care white paper on screening mammography guidelines

Screening mammography has been one of the most controversial medical advances since its inception over 40 years ago. Currently there are various conflicting screening recommendations coming from several medical societies. The United States Preventive Services Task Force (USPSTF) now recommends biannual screening from age 50 – 74. The new American Cancer Society (ACS) guidelines suggest women talk to their doctor to consider screening at age 40 but recommend yearly screening from age 45 – 55 with biennial screening after age 55. The media reports a “new breakthrough study” for or against mammography nearly every week. It is a very confusing environment for women and health care providers alike.

After reviewing the evidence, our breast cancer experts have decided not to alter EWBC’s guidelines in any way. This is consistent with the American College of Radiology (ACR), American College of Obstetrics & Gynecology (ACOG), Society of Breast Imaging (SBI) and leading cancer institutions across the country such as Memorial Sloan Kettering, MD Anderson and Mass General Hospital.

We recommend that average risk women begin screening mammograms at age 40 and continue every year for as long as they are reasonably healthy.

There has been opposition to mammography from the outset; unfortunately a great deal of the criticism is based on misinformation. The reduction in breast cancer mortality from mammography is significant and has been proven in multiple studies involving millions of women, yet it is routinely understated in the press and medical journals. We will attempt to lay out the evidence so that you can make an informed decision.

Breast cancer is one of the leading causes of death for women in the United States with approximately 225,000 diagnosed each year and nearly 41,000 women dying from the disease. From 1940 – 1990, the breast cancer death rate in the United States was stable. **Since 1990, with the widespread adoption of screening mammography, the breast cancer death rate has decreased by 35%.**¹ There has been more research performed on screening mammography than almost any other health condition. The screening debate is not due to lack of evidence, in fact, it is due to an abundance of evidence that allows for statistical manipulation and varied interpretation.

The goal of any screening program is to reduce the incidence of advanced disease and therefore decrease the mortality (risk of dying) due to breast cancer. Multiple randomized, controlled trials have been performed investigating the effect of implementing screening mammography. Nearly all of the trials showed a significant decline in deaths for women offered screening (up to a 31% decline), with an even greater reduction in deaths among women who were actually screened.² This benefit has been repeatedly confirmed in numerous observational studies. Two large observational studies, (not included in the USPSTF analysis) evaluating screening programs in Sweden and British Columbia in women age 40 to 79 showed a 40–44% reduction in breast cancer mortality.^{3,4}

Only one study, the Canadian National Breast Screening Study (CNBSS) claims that mammography does not reduce deaths for women age 40 to 59.⁵ These results are contrary to all the other data. The Canadian study (which is frequently cited in medical journals and by those opposed to mammography) was a fundamentally flawed study hampered by lack of adequate randomization with a statistically significant number of women with palpable, more advanced cancers placed in the screening mammography group compared to the control group. Additionally, the Canadian study was limited by poor quality mammography.⁶ Multiple leading radiologists at the time (including our own Wende Logan Young

MD) declined participation in the study due to the poor quality of imaging. Unfortunately, this fundamentally flawed study has been the source of many recent “new” studies which involve re-evaluation or sub-segmental analysis of the old data. This questionable science adds to the confusion surrounding mammography.

As debate surrounding screening mammography continues to evolve, the current objections center around the “potential harms” of mammography, not mammography’s overall effectiveness.

Mammograms save lives with a 25-35% decrease in mortality for women age 40 – 75.⁷ There is very limited data for women older than 75, but likely the effectiveness continues for as long as a woman is reasonably healthy. There is no question that breast cancer screening beginning at age 40 allows us to detect more cancers and that annual screening has the greatest opportunity for detecting the disease at the earliest stage.

Let’s address the main objections to mammography as laid out in the USPSTF statement and also mentioned in ACS guidelines.^{8,9} One of the “potential harms” of screening mammography leading to the change in recommendations is false positives. This means women who have screening mammography and then have to have an extra mammographic image, ultrasound exam or sometimes even a needle biopsy to ensure that everything is normal. The opponents to mammography place a high emphasis on the unnecessary worry caused by these false positives. While certainly having to have additional testing following a screening mammogram is an anxiety provoking situation, how does one actually calculate the “net harm?” How many callbacks from screening are equal to allowing one woman to die unnecessarily? For every 1,000 women who have a screening mammogram, 80 – 100 are recalled to get more mammography or ultrasound images. Fifteen are recommended for a needle biopsy and five are diagnosed with breast cancer. In our vast experience, patients seem to understand that mammography is not a perfect test and are willing to accept the minor inconveniences of an occasional extra view or even a biopsy in order to maximize the opportunity of finding a potentially harmful breast cancer.

A few unique ways in which we deal with the issue of false positives at EWBC is by using the most up-to-date technology and by offering to read screening exams with same day results while the patient waits. High volume screening centers, such as EWBC, have been shown to have higher sensitivity and specificity for finding breast cancers. The scientific studies which demonstrate the effectiveness of screening mammography were performed 20 – 30 years ago. Current breast imaging technology utilizing digital mammography is far superior in quality.¹⁰ Additionally we are transitioning to digital breast tomosynthesis (sometimes referred to as 3D mammography). This has been shown to not only find more cancers but also to reduce false positives (unnecessary extra mammographic images) by 15 – 67% depending on the study cited.¹⁰ Finally, by allowing patients to wait while their mammogram is being read and then addressing the need for any additional imaging or procedure within two hours, the duration of unnecessary anxiety is kept to a minimum.

The second “potential harm” associated with screening mammography is overdiagnosis. This reflects the fact that some breast cancers are slow growing and may take years or even decades to become clinically significant while others grow very fast and become problematic within months. A cancer that would not have progressed to become clinically significant within a woman’s lifetime, thereby not requiring treatment, is considered “overdiagnosis.”

We are learning more everyday about the great variability of breast cancers. Some breast cancers may take a long time before they ever

cause harm. Unfortunately we currently do not have any reliable way to know which cancers will progress quickly and which will not prior to obtaining a tissue sample. The best chance we have to identify which tumors are slow-growing and may not cause harm is by finding them on screening imaging and performing a biopsy. By knowing the exact diagnosis, treatment options can then be tailored to the specific diagnosis. The real issue is overtreatment of indolent cancers, not necessarily overdiagnosis. Detection of slow growing cancers should be considered recognition that we still have work to do in stratifying treatment options for low grade and early stage breast cancers, allowing us to apply appropriate therapies on the basis of expected prognosis.

What is the Appropriate Interval for Screening Mammography?

The goal of screening mammography is to find cancers at an early stage (smaller size), leading to more treatable disease and better outcomes. Surgeons, oncologists and radiation oncologists would always rather treat early-stage disease than late stage disease. Therefore it makes the most sense to find breast cancers at the lowest stage – when they are small and nonpalpable. The best way to do this is with annual mammography. While some breast cancers are indolent, others can progress very rapidly, doubling in volume in a matter of months. A longer duration between mammograms leads to larger cancers and higher stage disease. A recent analysis of breast cancer deaths in the state of Massachusetts found that 26% of deaths occurred in women who had regular mammographic screening while 74% of the deaths occurred in women who were not screened with mammography at regular intervals.¹¹ These more advanced cancers, besides being more lethal, often require higher intensity treatment such as chemotherapy, mastectomy or axillary dissection. Being diagnosed earlier (with screening mammography) in many instances allows women to avoid mastectomy or chemotherapy and the associated morbidity.

Is Screening Only For High Risk Women?

While it is very important to identify and oftentimes provide supplemental screening to women with a genetic mutation (BRCA1, BRCA2, etc) or with a strong family history of breast cancer, these high risk women only account for 10 – 25% of all breast cancers diagnosed. Screening only high risk women would miss 75 – 90% of all breast cancers. Every woman, even those without a gene mutation or a family history of breast cancer should undergo annual screening mammography.

What Age Should Screening Mammography Begin?

For the average woman in her 40's there are very few things that can cause serious morbidity or even death, unfortunately breast cancer is one of those things. Breast cancer incidence, like nearly all cancers, increases with age. But that does not mean that it doesn't occur with relative frequency at a younger age. At EWBC, we diagnosed 6,965 women with breast cancer in 2000 - 2011. Of these women, 1,207 women (17.3%) were in their 40's when they were diagnosed.¹² Nationally, more than 40 percent of the years of life lost to breast cancer death are from women diagnosed between ages 40 – 49.¹

In order to save the most lives, we recommend that women at average risk begin annual screening mammography at age 40.

The guidelines released by the U.S. Preventive Services Task Force do not recommend breast self-exams or clinical breast exams by a provider and only recommend very limited screening mammography. Following these guidelines would be a step backwards and such a detriment to women. **One out of eight women get breast cancer, how are we going to find these**

cancers? If a woman waits for her breast cancer to become evident as a palpable lump it will be larger and more likely to have spread to her lymph nodes at the time of detection. This is especially true for premenopausal women. Certainly breast exams and mammography are not perfect, but putting our head in the sand and having the hubris to rely solely on our treatment regimens to deal with breast cancer is misguided and dangerous.

Most experts around the world agree that screening mammography saves lives. Some individuals and organizations place a higher value on minimizing challenges for women associated with potential false-positive readings, "overdiagnosis" and the need for additional procedures. As a result, they recommend starting screening mammography later and having it performed less frequently. In contrast, EWBC places the most emphasis on what's been shown to save the most possible number of lives: annual mammograms beginning at age 40. In summary, screening mammography is the only proven method to reduce deaths due to breast cancer. This benefit has been observed for women aged 40 and up, and likely extends as long as reasonable health is maintained. The so-called "harms" due to mammography consist primarily of false positives in which the vast majority can be resolved quickly with additional mammographic views or an ultrasound exam. Further research and validation of supplemental methods to detect early breast cancer is needed as well as rethinking the "one size fits all" approach to treatment. In the end, providers and patients need to be allowed to make an educated decision, based on real science, regarding the benefits and limitations of screening mammography.

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