

THE NATIONAL WOMEN'S HEALTH NETWORK

Mammography

FACT SHEET



SCREENING MAMMOGRAPHY

Sometimes the work of women's health activists is easy. We discover that a new procedure or service can help improve women's health; we advocate for all women to have access to it; we do everything we can to ensure that it's provided in a high-quality way; and then we celebrate the gains made. However, sometimes it's more complicated. The case of mammography screening for breast cancer is a painful example of one such complicated women's health issue.

BACKGROUND

In the United States, breast cancer is the second most common cancer among women (non-melanoma skin cancer is first). Since 2000, deaths from breast cancer have decreased significantly by 2.1 percent among all U.S. women, thanks to more widespread awareness about cancer and advances in treatment options.¹

Mammography uses X-rays to take images of the breasts and identify cancer when it's too small to be felt so it can be treated early and aggressively. Mammography was originally studied as a screening tool in the 1960s.

The first clinical research trial indicated that screening for breast cancer saved lives. In this trial, asymptomatic women were screened every

year or two with mammograms and clinical breast exams; compared to women who received usual care, the women who got mammograms were 30 percent less likely to die of breast cancer.² Much of the mortality difference stemmed from breast cancers detected in women in their early 50s, which, researchers noted, cast doubt on recommendations to screen women under age 50.

This trial was followed by a large demonstration study that showed the average radiologist (i.e., a trained professional who is working outside of the highly structured environment of a clinical trial) could also identify small breast cancers using mammography.³ Based on these promising results, it appeared that mammography screening should be made available to all women who are at risk of developing breast cancer. Both the clinical trial and the demonstration study included women 40 – 64 years old. As a result, proponents recommended that regular screening begin at age 40, even though there had not been enough younger women in the studies to be certain screening helped women in their 40s.

In the aftermath of this early research, the NWHN advocated strongly for women to have access to mammography. In the late 1980s, we lobbied Congress for Medicare coverage of screening mammograms. At that time, Medicare didn't cover

any screening tests, and its managers were reluctant to expand the program's scope. In fact, when the NWHN testified before Congress in support of Medicare coverage of screening mammograms, we were opposed by a government accountant who said that it would be "too expensive" to pay the health care costs for all the women who would live many years longer if their breast cancer was cured after being found on a screening mammogram! Thankfully, Congress was willing to expand Medicare's coverage even after the accountant's dire warning. After Medicare began to cover screening mammograms, private insurance companies followed suit, and programs aimed at reaching women without insurance began in earnest.

ENSURING HIGH-QUALITY SERVICES

With access expanding, NWHN next turned its advocacy efforts to the quality of mammograms, and found we had work to do. Provision of screening mammography wasn't regulated in those days, and the quality of machines used varied greatly — as did the training and experience of technicians and radiologists. Many women received very high-quality services, but not everyone did. And, a bad mammogram is worse than no mammogram at all.

The Network created a guide to the important elements of high-quality mammography, and NWHN members volunteered to check out facilities in their hometowns. When members found inconsistent quality, we took this information to Congress and sought Federal regulations. Other women's and cancer advocacy groups joined in this effort, and in 1992, the Mammography Quality Standards Act (MQSA) was passed. We were especially proud that the MQSA gave women the right to get a copy of their own mammogram.

In addition, the MQSA set the standard for regulating every facility that provides mammography with the exception of Dept. of Veterans Affairs facilities. According to the American Cancer Society, to be certified by the Food and Drug Administration (FDA), "the equipment, personnel, and practice of the facility must be reviewed by an FDA-approved accreditation body, have an on-

site inspection, and meet the following criteria:

1. Each mammography unit has to be accredited.
2. Certain staff members must meet strict standards including:
 - Radiologists (the doctors who interpret or read the mammograms)
 - Radiologic technologists (those who actually position women for the mammogram and take the pictures)
 - Medical physicists (professionals who specialize in medical equipment and image production)
3. Typical x-rays are reviewed for quality and information on radiation dose, which is required to be very low."⁴

You can look up the FDA's [list](#) of all certified mammography facilities.

THE DANGERS OF OVER-SCREENING

In the 1990s, the original premise of mammography — that screening saves women's lives — came into question. In 1992, the NWHN began analyzing women's true benefits from mammography screening and discovered the benefit was not as significant as had been originally thought — nor did it apply equally to women of all ages. The NWHN dove into this work, not because we thought we were exposing a sham (we'd promoted screening mammography, after all) but because our members want to know if there were any doubts about the effectiveness of any treatment.

What we discovered was disheartening: screening's life-saving benefits were not found in all clinical trials. It certainly wasn't found in the one trial designed to show the benefit of beginning mammography at age 40.⁵

NWHN went public with this information, and in 1993, issued a position paper recommending against screening mammography for pre-menopausal women. At the time, this was a very controversial position. The breast cancer advocacy movement was just getting started, and many organizations had a hard time accepting the idea that screening

mammography might not really be very effective.

We also found that many people were shocked at the very idea that screening could, in fact, be harmful. However, it makes sense if you think about it this way: screening leads to diagnosis, which leads to treatment. There is no treatment without risks. Treatment is often worth the risk when a condition is causing symptoms or is dangerous. But early and asymptomatic cancer that is found through screening doesn't always progress to life-threatening and advanced cancer. The NWHN wanted to be sure that treating everyone who was found with early cancer would actually help save women's lives in the long run.

In 2009, the US Preventive Service Task Force (USPSTF) updated its recommendations on screening mammograms, re-igniting debate over this use of this tool. The USPSTF is an independent panel of non-federal experts in prevention and evidence-based medicine. It conducts scientific evidence reviews of a broad range of preventive health services and develops recommendations for use by clinicians and health care systems. The new recommendations in 2009 stated that the net benefit of annual screening mammograms was small for women aged 40 to 49 and that the negative outcomes (i.e., false positives, unnecessary anxiety and treatment) outweigh the benefits of screening.⁶ As the National Cancer Institute, which also analyzed the study data, stated at that time: "Screening for breast cancer does not affect overall mortality, and the absolute benefit for breast cancer mortality appears to be small."⁷

More recently, the Cochrane Collaborative, an independent organization that conducts evidence reviews to guide health care decisions, re-analyzed the studies on screening mammography's outcomes. The review included seven trials, involving 600,000 women aged 39 to 74 years.

These women were randomly assigned to either receive screening mammograms or not. The authors noted that: The studies that provided the most reliable information showed that screening did not reduce breast cancer mortality. Studies that were potentially more biased found that screening reduced breast cancer mortality. However, screen-

ing will result in some women getting a cancer diagnosis even though their cancer would not have led to death or sickness. Currently, it is not possible to tell which women these are, and they are therefore likely to have breasts or lumps removed and to receive radiotherapy unnecessarily. If we assume that screening reduces breast cancer mortality by 15 percent after 13 years of follow-up and that over diagnosis and overtreatment is at 30 percent, it means that for every 2000 women invited for screening throughout 10 years, one will avoid dying of breast cancer and 10 healthy women will be treated unnecessarily. Furthermore, more than 200 women will experience important psychological distress including anxiety and uncertainty for years because of false positive findings.⁸

WHEN TO BEGIN AND END A MAMMOGRAM SCREENING SCHEDULE

When you should begin getting mammograms, and how long you should get them for, depend on such issues as your risk levels and your personal views about screening. The USPSTF recommendations, which the NWHN supports, are as follows:

WOMEN UNDER AGE 50

Mammography screening has not been studied in women younger than 40 because earlier studies showed conclusively that breast tissue is more sensitive to radiation before age 40. High dose radiation, such as exposure to nuclear bomb blasts or certain kinds of medical treatment actually causes breast cancer.⁹ Breast cancer is much less common among women under age 40, but it is not rare, and a screening test that works for younger women is badly needed. In the absence of a proven screening test, the ACS and some other experts have responded to women's need by offering what exists – mammography. This is troubling because younger women are far more likely to have a false-positive mammogram (i.e., to have the mammogram indicate there is a problem, when there really isn't anything wrong). On the other hand, cancers among younger women are much more aggressive, and regular screening might help detect aggres-

sive cancers when they do occur. For some women, not getting tested can be a source of anxiety.

The American Cancer Society recommends that women at high risk for breast cancer should start getting screening mammograms as early as age 30. Many other experts, including the National Cancer Institute recommend that all women start screening at age 40. Increased risk can stem from gene mutations (like the BRCA1 and BCRA2 gene mutations); a strong family history of breast cancer among one's mother, sister or daughter; and other factors.¹⁰ The USPSTF recommendation is that: "The decision to start regular, biennial screening mammography before the age of 50 years should be an individual one and take patient context into account, including the patient's values regarding specific benefits and harms."¹¹

The NWHN believes that breast cancer screening should not be recommended for pre-menopausal women until it's been well-proven to do more good than harm.

WOMEN AGE 50 TO 74

All experts agree that women should be regularly screened between the ages of 50 to 74. There is not a consensus; however, on how often these women should be screened. Some experts recommend mammograms every year, others suggest screening every two years. Research indicates that screening women every year finds 19 percent more breast cancers than screening every other year. (Another way to think about this is that 81 percent of the cancers found by screening every year are also found in screening every two years.) The USPSTF recommends biennial (every other year) screening mammography for women aged 50 to 74 years.¹² It notes that the biggest reductions in breast cancer mortality that stem from screening mammography occur among women between 60 and 69 years of age. The NWHN believes that regular mammography screening every one to two years for women ages 50 to 74 is a reasonable choice. We also respect women who, after being fully informed about the pros and cons of screening, decide not to follow this schedule.

WOMEN OVER AGE 74

Experts also disagree about screening women age 75 and older, primarily because evidence is lacking on the mammography's benefits in this age group. As with younger women, experts also disagree about whether it's better for women in this age range to be screened annually or every other year. The incidence of breast cancer continues to increase into a woman's 80s, but most breast cancers that occur among older women are less aggressive than those found in younger women. The USPSTF recommendation is that "the current evidence is insufficient to assess the additional benefits and harms of screening mammography in women 75 years or older."¹³

The NWHN believes that screening for breast cancer should not be denied to women over age 74 just because of their age. We believe screening plays a role in supporting healthy aging, and also that its usefulness should be re-assessed if an older adult is facing multiple health problems and a shortened life expectancy.

WHAT DO EXPERT HEALTH ADVOCATES SAY?

Below, we've included the opinions and analysis of some organizations whose work on breast cancer we respect.

[CENTER FOR MEDICAL CONSUMERS](#)

"Mammography-detected breast cancers have the best outlook. The screening test also leads to the detection and treatment of breast cancers that would never become life-threatening. Mammography's role in the nation's declining breast cancer death rate remains unclear. At best, it appears minimal. Women are not receiving honest information about mammography's harms."

[Breast Cancer Awareness Month](#)

[DR. SUSAN LOVE RESEARCH FOUNDATION](#)

"At first glance, there would seem to be little harm in screening women under 50. But there is a downside. Many abnormalities seen on mammograms may not be cancer (these are called false positives), but they will prompt additional testing and anxiety. In fact, as many as 3 out of 10 women who

begin annual screening at age 40 will have an abnormal mammogram during the next decade, and the majority of these will end up having biopsies—only to learn that the test was a false positive. Also, mammography can miss tumors in young women because young women tend to have dense breast tissue, which, like cancer, appears white on a mammogram. Even in women over 50, mammography is far from a perfect screening tool. That's because finding a cancer 'early' is not a guarantee that your life will be saved. We now know that there are different types of breast cancer, and that how quickly a cancer progresses has more to do with the type of cancer it is than when it is found. This is one of the main reasons why studies have found that annual mammography only reduces a woman's risk of dying of breast cancer by somewhere between 15 and 30 percent. (In contrast, it is estimated that colorectal cancer screening with colonoscopy reduces a person's risk of dying of colorectal cancer by 60 to 70 percent.)”

[Prevention / Detection: Breast Cancer Detection](#)

[NATIONAL BREAST CANCER COALITION \(NBCC\)](#)

“The scientific evidence from randomized trials on the impact of screening mammography in saving lives is conflicted, and the quality of the individual trials limited. The National Breast Cancer Coalition (NBCC) believes that the benefits of screening mammography in reducing mortality are modest and there are harms associated with screening. No individual woman can be assured that screening mammography will be effective for her, and from a public health perspective, the harms and public health costs of screening mammography may outweigh the modest benefits of the intervention. Mammography does not prevent or cure breast cancer, and has many limitations. Therefore, a woman's decision to undergo a screening mammogram must be made on an individual level, based on quality information about her specific risk factors, and her personal preferences. Women who have symptoms of breast cancer such as a lump, pain or nipple discharge should seek a diagnostic mammogram. Ultimate-

ly, resources must be devoted to finding effective preventions and treatments for breast cancer and tools that detect breast cancer truly early.”

[Mammography for Breast Cancer Screening: Harm/Benefit Analysis](#)

CONCLUSION

Times have changed but, unfortunately, the complicated nature of mammography screening has not. The same screening mammography trials still generate controversy, just as they did in the 1990s. But, the emergence of several wonderful breast cancer advocacy organizations, which conduct their own independent analysis of science and clinical trials, make it much easier for women to find excellent information on this complicated subject.

For information on the efficacy of digital vs. film mammography, see the NWHN article, [Digital Mammography: Is Newer Always Better?](#)

CONTACT US

The National Women's Health Network is committed to ensuring that women have access to accurate, balanced information. For more information, email us at healthquestions@nwhn.org or call the Women's Health Voice at (202) 682-2646. Stay informed, connect with us on Facebook and Twitter.

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