

WHAT YOU NEED TO KNOW ABOUT MAMMOGRAPHY SCREENING GUIDELINES

The American Cancer Society and the American College of Radiology recommend annual screening mammography beginning at age 40. Women with higher risk due to family history of early, pre-menopausal breast cancer may need to start at age 30. Nationally only 66% of women over age 40 report having a mammogram in the past two years

For 3000 years from the earliest recorded instance of breast cancer found in an Egyptian tomb, until the 1980's, breast cancer was considered a hopeless, fatal illness. Only rarely was it diagnosed early enough to achieve a cure, and there was no way to prevent it. Then in the 1970's and 80's early diagnosis with mammography was tested. Tens of thousands of women were randomized to groups invited for mammography, and control groups who were not invited. There were plenty of mistakes made in the trials, for example some used only single view mammograms, which today we would consider inadequate. None used digital mammography, which has been shown to be superior, especially for younger women. And most significantly there was substantial overlap in the compared groups because some women offered mammography never had mammograms, and as many as 25% in the so-called "no mammography" groups got mammograms on their own. In spite of these shortcomings mammography was shown to significantly reduce deaths from breast cancer. In fact a review of breast cancer deaths during the 1990's in Massachusetts showed **that only 20% of breast cancer deaths occurred in the 80% women having mammograms at least every two years.** The vast majority of breast cancer deaths occurred in the 20% of women who did not have mammograms.

Until recently there was consensus among numerous governmental and non-governmental medical societies that annual breast cancer screening with mammography should begin at age 40. That changed in November, 2009 when The US Preventive Task Force recommended that women start screening at age 50, and then only every other year. The Task force is a government agency, and includes no breast cancer specialists. The "harms" which the Task Force felt out-weighed the benefits of mammography included recalls for additional imaging, anxiety, and benign biopsies. This is a very paternalistic approach, since women have consistently reported in surveys they would prefer to be recalled for more tests, even biopsy, if it means not missing a detectable breast cancer. So why propose a change?

The screening policy proposed by the Task Force is not based on the mammography screening trials, but instead uses computer models that assume a 15% reduction in breast cancer mortality for women in their 40's. Trials in North America and Europe have actually shown a benefit of 30 to 40%, but the task force chose to use the lowest published value. In fact the latest data from the Swedish screening trials shows a 40% mortality benefit for women in their 40's. If you start with the lowest possible assessment of benefit, and add the highest possible assessment of harms, it's easy to make it look like costs exceed benefit.

The Task Force proposes to start routine screening at age 50 instead of 40, but breast cancer risk does not change abruptly at age 50. This assumption is based on publications by Task Force member Karla Kerlowski comparing breast cancer screening in women aged 30 to 49, with women over age 50. Since very few women in their 30's get breast cancer, this biases the statistics. The Task Force suggests that high risk women in their 40's consult with their physicians to decide whether to have a mammogram. In fact 80% of breast cancer occurs in women without risk factors like family history, so if the decision whether to screen is based on assessment of risk, we will miss the opportunity of early diagnosis in 80% of breast cancers. **Women who might feel secure in avoiding mammograms between the ages of 40 and 50 might include those who do not consume alcohol, are not overweight, have no family history of breast or ovarian cancer, had a late onset of menses (age 14 or higher), have had multiple full-term pregnancies beginning before age 20, have breast fed for a total of 10 years or more, and have not taken hormones.** The reality of modern life is that this description fits almost no one. Since 80%

of breast cancer occurs in women with no significant risk factors, all women should begin screening mammography at age 40.

There is a lower incidence of breast cancer for women before age 50, what the report neglects to account but greater impact of early detection for younger women. The potential years of life saved are obviously greater for a 40 year old with breast cancer, that for a 50 year old or a 60 year old. Per year of life saved mammography screening is well within the realm of costs for procedures we have no trouble paying for, like cardiac bypass surgery or dialysis for kidney failure, but somehow as a society we seem to have trouble paying for prevention.

Over-diagnosis, which is the detection of some breast cancers that would not become life-threatening, has also been cited as a reason to avoid mammography screening. This is based on a report from Denmark claiming that some invasive breast cancers may spontaneously regress, which is nonsense. (Incidentally it should be noted that Denmark did not until recently offer population-based mammography screening, and as a result has the highest rate of breast cancer mortality in Europe.) Tumor markers, tests for hormone receptors, and other cancer characteristics are helping to solve this problem by better defining which cancers need aggressive treatment, and which might safely be ignored.

Mammography does not detect **every** cancer in time to for cure. However, since mammography became widely available in this country in the 1990's deaths from breast cancer have decreased by 30%. Breast cancer remains a serious threat, with 140,000 deaths every year in the US. It is one of the leading causes of death for women, so curtailing screening would be a serious mistake.

In fact the real question is not whether mammography is effective, but whether it is effective enough. We know that mammography does not find every cancer in time, even in women having annual mammograms starting at age 40. But most of the cancers missed by mammography can be detected with ultrasound, and there are now several companies working on ultrasound screening devices. I participated in one trial for a device called Sonocine. We enrolled over 4000 women at several different facilities, with multiple interpreting radiologists, and showed that we could double the number of cancers detected compared with mammography alone, and triple the number of invasive cancers detected at 1 cm or less in size. This has the potential to significantly reduce breast cancer deaths.

In the era of cost-containment we should not abandon prevention by limiting access to breast cancer screening but that is exactly what is happening. Even though the US Preventive Task Force acknowledged that adoption of their recommendations will lead to more breast cancer deaths, states strapped for cash have been ready and willing to adopt them anyway. Florida, California, Michigan, New York, and several other states have all stopped coverage for mammography before age 40 for women in their low income health programs. This will ultimately lead to increased costs to society in lost productivity, lost lives, and possibly more health care costs as well.

Instead we should achieve cost-containment by encouraging disease prevention and personal responsibility. Health plans should incentivize screening procedures like mammography by reducing premiums for those who participate. Instead of waiting till you have a problem, make screening and prevention a priority. It's the best way to protect your health.

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