

## Mammography advice conflicts

### Screenings detect breast cancer earlier, but outcomes questioned

By [Markian Hawryluk](#) / The Bulletin / August 11, 2011

Scheduling a mammogram can be more than a little confusing for most women. Seemingly on a monthly basis, they'll hear reports about new guidelines or new research with vastly different messages about the benefits of getting an annual mammogram.

Less than two years ago, the U.S. Preventive Services Task Force issued new guidelines recommending against routine screening mammograms for women in their 40s. But earlier this year, the American College of Obstetricians and Gynecologists changed their guidelines to say such women should indeed get the scan every year.

Study after study claims to offer definitive proof about the utility of screening mammograms, only to be countered by new research the next month. The more research is conducted, the more cloudy the mammography image becomes.

There is much less debate over the benefits of regular mammograms for women older than 50, or those with identified risk factors, such as obesity, delayed child bearing or a family history of breast cancer. It's for the woman of average risk in her 40s where guidelines primarily differ.

After decades of researching the impact of screening mammography, science appears no closer to resolving the question: Is the test worth it? We may never know for certain.

"Screening mammography continues to be one of the most contentious issues within the medical community," said Dr. H. Gilbert Welch, a Dartmouth Medical School professor writing in the *New England Journal of Medicine* last year. "That physicians are still debating the relative merits of screening mammography despite the wealth of data suggests that the test is surely a close call, a delicate balance between modest benefit and modest harm."

And that may mean it's up to each woman herself to cast the deciding vote in favor or opposed to getting an annual scan.

How is it that different groups of clinicians can look at the same body of research and come up with such vastly different conclusions? For one, they may be comparing apples to oranges.

"The body of literature each group is looking at may not be the same," said Dr. Peter Polacio, a gynecologist with Bend Obstetrics and Gynecology, adding that different clinicians might interpret different data in different ways.

The U.S. Preventive Services Task Force, a federal advisory panel of health care experts that evaluates the latest scientific evidence on preventive health services, for example, used computer modeling to help them weigh the benefits of mammograms finding relatively few cancers in the 40 to 49 age group against the much higher probability of false positives, additional imaging tests and biopsies.

The task force found that for every 556 women ages 40 to 49 who undergo screening mammography, 47 will face additional imaging tests, five will undergo biopsies, and one will be diagnosed with invasive breast cancer. In the minds of the task force participants, screening mammograms would put a lot of women through unnecessary stress and anxiety to identify a single woman with cancer. And in the end,

screening mammograms in the 40 to 49 age group would reduce the number of deaths from breast cancer by 15 percent.

"They were recognizing that by far what we're going to pick up when we do screenings are going to be benign processes and we're going to be putting too many women through what are ultimately going to be unnecessary procedures, the expense and the potential complications," Polacio said.

The gynecology group, on the other hand, was swayed more by the overall incidence of breast cancer in the 40 to 49 age group as well as the ability to catch tumors earlier in the process when they are easier to treat and cure rates are higher.

Each year in the U.S. about 40,000 women in their 40s are diagnosed with breast cancer and about one in five will die from it. Screening mammography reduces that death rate by about 15 percent. If all U.S. women received a mammogram each year from age 40 to 49, it would result in 6,800 fewer deaths.

<p><b>Probability of developing breast cancer within 10 years:</b></p> <p><b>Age 30: 1 in 299</b> <b>40: 1 in 69</b> <b>50: 1 in 42</b> <b>60: 1 in 29</b> <b>70: 1 in 27</b> <b>Lifetime: 1 in 8</b></p> <p>In 2009, the U.S. Preventive Services Task Force concluded that although women ages 40 and 50 would benefit equally from routine screening mammography, women in their 40s face higher risks, including false positives, false-negative results, overdiagnosis, pain during procedures, anxiety, distress, and other psychological responses.</p> <p>For every 556 women ages 40-49 who undergo screening mammography, 47 will face additional imaging, 5 will undergo biopsies, and one will be diagnosed with invasive breast cancer.</p> <p>A study published last month in the British Medical Journal concluded that reductions in breast cancer mortality in Europe over the past 30 years were attributable primarily to better treatment methods and not to routine mammograms.</p> <p>Women who undergo screening mammography in their 40s have a 15 percent lower risk of dying from breast cancer. In the U.S., screening all women starting at age 40 would result in 6,800 fewer deaths.</p>	<p><b>Screening mammography recommendations</b></p> <p><b>American College of Obstetricians and Gynecologists:</b> Every year starting at age 40</p> <p><b>American Cancer Society:</b> Every year starting at age 40</p> <p><b>National Comprehensive Cancer Network:</b> Every year starting at age 40</p> <p><b>Society of Breast Imaging:</b> Every year starting at age 40</p> <p><b>National Cancer Institute:</b> Every one to two years starting at age 40</p> <p><b>U.S. Preventive Services Task Force:</b> Every two years starting at age 50</p> <p><b>American College of Radiology:</b> Every year starting at age 40</p>
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### *Setting a threshold*

While such numbers seem compelling, consider that more than 22 million women in their 40s would face a false positive and go through all the additional testing and anxiety that goes along with it to save those 6,800 lives. Is it worth it? It's a matter of opinion.

"Somebody has to set a bar of how many false positives are we willing to accept to get the true positives," said Dr. Stephen Kornfeld, an oncologist with St. Charles Cancer Center in Bend. "And that's the debate."

In the 40 to 49 age group, for every woman diagnosed with breast cancer, 54 others would receive false positives. In the 50 to 59 age group, that number drops to 25. The younger the breast tissue, the more dense it is and the more likely to result in false positives. The participants of the federal task force said the number of false positives for women younger than 50 was too high to justify routine screening. The gynecology groups, as well as the American Cancer Society, the National Cancer Institute and the American College of Radiology disagreed.

Dr. Laurie Martin, a radiologist with Central Oregon Radiology Associates in Bend, said she diagnosed three patients in their 40s with breast cancer within two months of the task force issuing the 2009 recommendations not to screen women in that age group.

"One of their arguments to avoid that age group is that it's too much anxiety and too much stress for the patient to have to go through the work-up for a non-cancer diagnosis," she said. "I'll tell you what, the stress that I see and the anxiety that I see in a patient that's 40 years old and at the peak of her career, with kids at home, being told they have metastatic breast cancer, that's huge. That's way worse than having to tell a 40-year-old, 'let's biopsy this, let's get a sample and it's probably nothing and you can be on your way.'"

The gynecology group also relied heavily on a concept known as sojourn time, the time it takes for a tumor to grow from a size identifiable on a mammogram to one that can be felt in the breast by a patient or a doctor.

"Although women in their 40s have a lower overall incidence of breast cancer compared with older women, the window to detect tumors before they become symptomatic is shorter on average," said Dr. Jennifer Griffin, who co-authored the gynecology guidelines. "If women in their 40s have annual mammograms, there is a better chance of detecting and treating the cancer before it has time to spread than if they wait two years between mammograms."

In women age 40 to 49, the sojourn time is two to 2.4 years. By age 50, that time increases to 2.5 to 3.7 years. Screening women annually in their 40s means more of those tumors will be caught early, when they're most easily treated. Studies have shown that women with tumors treated at that early stage have a 98 percent five-year survival rate, and 89 percent of tumors under 1 centimeter in size can be cured with surgery. Other research suggests that tumors under 1 centimeter in size found in screening mammograms won't be discovered through breast exams for another three years.

"We can't do much to prevent breast cancer," Polacio, the Bend gynecologist said. "So it's all about early detection and trying to minimize the invasiveness of treatment and to optimize survival rates. The earlier the better."

### *Gauging impact*

The screening mammogram issue is also clouded by the difficulty of separating the effects of screening and the effects of treatment. Deaths from breast cancer have declined substantially over the past few decades after screening was implemented. But that time frame also coincided with significant progress in treating breast cancer. How much of that gain was from identifying tumors while they are smaller and easier to treat and how much is due to better treatments? Again it's unclear.

Researchers have tried to parse out the benefits of treatment versus screening by comparing similar groups of patients with the same access to treatment but different screening rates. A Swedish study published in June, for example, had randomized women to either screening or non-screening groups over a seven-year period. After 29 years — the longest recorded follow-up time for a mammography screening trial — there were 30 percent fewer breast cancer deaths in the screening group.

"Most of the deaths prevented would have occurred more than 10 years after the screening started," said Dr. Stephen Duffy, a University of London medical school professor who led the research. "This indicates that the long-term benefits of screening in terms of deaths prevented are more than double those often quoted for short-term follow-up."

But a study from the British Medical Journal last month found quite the opposite. Comparing neighboring countries in Europe that had implemented breast cancer screening rates at different times, the researchers found little difference in survival rates.

From 1989 to 2006, breast cancer deaths in Northern Ireland, which implemented organized routine mammography screening in 1990, dropped 30 percent. But rates dropped 27 percent in the rest of Ireland over the same time frame despite no organized screening program. Despite fewer than half of women age 50 to 69 being screened, survival rates weren't significantly different.

Similar findings were true when researchers compared the Netherlands and Belgium, and Sweden versus Norway.

For some clinicians, however, the distinction may not matter. It's the combination of advances in mammography and cancer therapies together that are saving lives.

"Screening is improving and treatments are improving," Martin said. "You can just single out one component over the other and say this is better than the other. I think it's a package deal."

### *Sorting it out*

Martin said she relies on guidelines from the American Cancer Society and the National Comprehensive Cancer Network, as well as guidance from her professional group, the American College of Radiology, all of whom support annual mammograms starting at age 40. Polacio said he also relies heavily on his professional organization, the American College of Obstetricians and Gynecologists.

"They are providing us guidelines but I still have to the responsibility to look at the guidelines, to look at the original articles and make my own interpretations and manage my patients as I see fit," he said.

"In the end it's going to be a decision that gets made between the physician, (or other) provider, and the patient."

Still Polacio said all the different guidelines and research studies often leave women confused about whether or not to be screened.

"I'll spend more time trying to explain the confusion and the differences in recommendations than it would take to just do the evaluation," he said.

But Polacio said the debate over screening, particularly the emphasis on the high rate of false positives, has also had an impact on how patients are treated when a mammograms find an irregularity. Especially in younger women, there's a much higher likelihood it's a false positive than an actual cancer.

"It doesn't mean every case has to go to surgery. We should interpret the information that we have and have the patient come to a decision about how they would like to manage that mass," Polacio said. "Hopefully, it's caused us to not be so knee-jerk in our reflex to say, 'Mass? Excise.'"

As an oncologist, Kornfeld rarely has to broach the topic of screening mammograms with his patients. He generally only sees patients after they've been diagnosed with breast cancer. Still, the debate over screening mammography means it's a frequent topic of conversation with family and friends.

"You start asking people what are you more afraid of?" he said. "Are you more afraid of possibly missing a breast cancer sooner or more afraid of unnecessary testing and maybe unnecessary radiation, given that the unnecessary testing and radiation is going to be more common than the breast cancer?"

The reality is the evidence on whether to screen or not screen in the 40 to 49 age group is too close to call, and doctors can make a reasonable argument either way. In that case, it's often the woman's personal preference or her strongest fears that become the deciding factor.

"If you said to any woman who is 45, 'What is your biggest health fear?' She's going to say breast cancer," Kornfeld said. "I think even if you said to a smoking diabetic woman with high blood pressure what's is your biggest health fear, I wonder if she would say a heart attack. She's still going to say breast cancer."

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