Ask the Expert about mammograms
By John Bramble, MD, radiologist at Washakie Medical Center

What are the benefits of screening for breast cancer?

Breast cancer screening allows many breast cancers to be detected at an earlier stage.

- When a breast cancer is detected at an earlier stage, it can often be stopped from spreading, and cured.
- Treatment for an early stage breast cancer is not as difficult or extensive as treatment for later stages of breast cancer.

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What tests are recommended for breast cancer screening?

The American Cancer Society recommends the following tests for screening for breast cancer:
- The self breast exam
- The clinical breast exam by a qualified professional
- Screening mammography, either analog or digital.
- In young women, with very high risk of breast cancer, a breast MRI exam is recommended.

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How do I choose a mammography facility?

There are several factors to consider in choosing where to have your mammography screening exam. When you choose, remember that you should be committing yourself to an exam either yearly, or once every two years.

- The most important factor to check is whether the facility is Mammography Quality Standards Act (MQSA) certified. The facility should display their certificate on the wall of the mammogram room.
- The second factor is whether they have digital mammography. A large scale study found that women below 50, premenopausal women, and women with denser breasts have better results with digital mammography.
- Another factor is continuity of care. It is important that any facility should try to obtain prior mammogram images for comparison (just comparing the report isn't enough). That facility should also be committed to making those mammogram images available for future comparisons. Having your mammogram obtained at the same facility year after year insures that prior exams will be available for comparison without delay.
- Comparison is most effective when the mammograms are obtained with the same positioning and image processing. The are some variations in positioning and processing between different facilities. Those variations reduce the effectiveness of comparisons.
- Digital mammography has recently become widely available in Wyoming. The majority of women in Wyoming now live within 30 minutes of a facility offering digital mammography. Those women who don't live within 30 minutes of a digital mammogram facility often visit towns with available digital mammography on a monthly (or more frequent) basis. Access to screening facilities is no longer an excuse for not having a screening mammogram for most women in Wyoming.
- Continuity of care is also a factor in choosing where to have your clinical breast exam. The professional health care provider is in a better position to detect changes in your breast exam if they have seen you in previous years.

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Is screening mammography a perfect test?

We have no perfect tests or treatments. Screening mammography cannot detect all breast cancers. Some breast cancers get worse even when they are caught at an earlier stage. There are some potential harms from mammography exams, including pain, anxiety, and findings that lead to unnecessary biopsies because normal breast tissue can sometimes look like a breast cancer. Radiation exposure can increase the risk of

cancer, although the risk of radiation exposure from a mammogram exam is very, very low.

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Why do they use radiation to screen for breast cancer, when radiation exposure might lead to breast cancer?

Opinions of the risk of radiation causing a breast cancer vary widely. Panels of experts convene periodically to review the data on the risks of radiation and establish a consensus. Based on recent expert consensus about the risk of radiation induced cancer deaths, calculation of risk versus benefit suggest that we save 58 to 182 women from dying from breast cancer for every cancer death caused by radiation. The benefit of saving lives by early detection far outweighs the risk of death from a cancer induced by radiation. The amount of radiation from a digital mammogram is about equal to the amount of radiation received by the breast from natural sources over a period of 3 months.

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Why do they have to squeeze the breast for a mammogram?

In medical terms, squeezing is compression. Compression of the breast improves the mammogram for two reasons. The normal breast tissue can hide the presence of a cancer. Compression spreads the tissue out, reducing the amount of breast tissue above and below a cancer, so the cancer can be seen on the mammogram. The first reason for compression is to make breast tumors visible when they are smaller, at an earlier stage of disease. The second reason for compression of the breast is to reduce radiation exposure.

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Is there anything that can be done to reduce the pain of a mammogram?

If you still have menstrual cycles, be sure to schedule your exam in the first week after your period. Taking one pill of acetamenophen (tylenol) or ibuprofen (advil or motrin) 1 hour before the exam can also minimize tenderness. At Washakie Medical Center, we have disposable foam pads paid for by the Washakie Hospital Auxiliary to provide some comfort to women undergoing mammography.

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Can I reduce my risk of breast cancer through preventive measures, and skip the screening mammogram?

Most women have read about the risk factors for breast cancer. The most important risk factor, getting older, you cannot (and hopefully will not) change. You cannot change you heredity. Unless you have planned ahead, you cannot change your age of first pregnancy or whether you breast fed your children. You cannot change your breast density. You can change whether or not you take hormones after menopause, your percent body fat, how much you exercise, and how much alcohol you consume. However, 40% of breast cancers occur in women with no risk factors other than age and being female. So even if you have no risk factors other than your age and being female, you can still reduce your risk of dying from breast cancer by having screening mammography.

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Should I have screening mammography on a yearly basis beginning at age 40, or once every two years beginning at age 50?

For years the standard recommendation for screening mammography was to begin at age 40, and obtain yearly exams. In 2009, the United States Preventive Services Task Force (USPSTF) diverged from the American Cancer Society recommendations and graded the strategy of screening once every two years as the best strategy. Technically, the grading system of the USPSTF was meant to affect policies about whether Medicare and insurance companies should provide coverage for yearly screening, or biennial (once every two years). But with the media coverage, women thought the USPSTF was presenting the best science based decision. But science can only give us predictions about the number of lives saved for each strategy. If we decide to pick the strategy that will save the most lives, then science tells us that the

strategy that will save the most lives is annual mammography beginning at age 40. If there are concerns about potential harms (risks) from screening mammography, then nearly as many lives can be saved by screening once every two years beginning at age 50, with less than half of the number of mammogram exams. There was no new data to suggest that screening mammography was any less effective than had been previously thought, so the American Cancer Society did not change their recommendations, choosing the strategy that could save the most lives.

To put the numbers predicted by scientific data in perspective, consider the following calculation.

- If all women in the United States were to choose annual screening mammograms beginning at age 40, we could save about 20,000 women every year.
- If all women in the United States were to choose mammographic screening once every two years beginning at age 50, we would save about 16,000 women every year.

The numbers are hypothetical, but when we discuss a cancer that affects 1 in 8 of all women in the United States, even small percentages mean a lot of lives.

Whether or not a woman has screening mammography, when to begin, and whether to have it on a yearly basis are all personal choices. Scientific data can give an estimate of the benefit versus risk from breast cancer screening. But it is a personal choice of how much you value the benefit, and how much you abhor the risk. Science can give you numbers, but it cannot factor in your personal experiences and values.

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What are the risks (potential harms) of screening mammography?

- false positive mammograms,
- unnecessary biopsies,
- over-diagnosis,
- radiation induced cancer,
- pain associated with the exam,
- anxiety over the results.

False positive mammograms are mammograms interpreted as possibly showing a cancer when in fact there is no cancer. MQSA establishes guidelines for interpreters (usually radiologists) as to the percent false positive readings. Radiologists who consistently have high false positive rates are expected to work to lower their false positive rate, or they may lose their certification as MQSA interpreters.

Unnecessary biopsies are biopsies done for suspicion of breast cancer that are found not to be a breast cancer. MQSA also has guidelines for the ratio of unnecessary biopsies to the number of cancers detected.

Over-diagnosis refers to the detection of cancers that would have never become a problem. This is more of a problem for women who are close to the end of their life than women in their 40's. This is often misunderstood. Estimates from researchers associated with large randomized clinical trials suggest that 95% of invasive breast cancers found by screening mammography would have eventually grown to become a palpable lump felt by the patient. A smaller percentage of noninvasive breast cancer would have continued to grow to eventually become palpable.

Pain and anxiety are very personal experiences. On a personal basis, women may make a reasonable choice that the pain and anxiety outweigh the benefit of reduction in the chance of dying from breast cancer. I just hope women will give us a second chance if they have experienced too much pain.

As noted earlier, the risk of radiation induced cancer is very, very low. You will receive as much radiation to your breasts in three months from naturally occurring radiation sources (or more, if you spend much time in the mountains).

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Why do we still hear about scientific studies that question the value of mammography?

Argument is a key function in the scientific process. A scientific journal will publish many articles that contradict each other. There are many types of articles that get published in a scientific medical journal. The most reliable and convincing scientific study in medicine is a large scale prospective, randomized, (and blinded when possible) controlled clinical trial. There aren't too many articles that report these trials because of the expense and length of time required for the study. The only two large scale randomized controlled clinical trials published (or updated) since 2009 both supported the hypothesis that screening mammography reduces breast cancer deaths (including the age group from 40 to 50). Some retrospective, observational studies have been published (that are considered less reliable scientific studies) questioning the value of mammography. Some opinion letters or editorials have been published claiming that we are not adequately informing people of the risks and benefits.

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In summary, screening mammography is not a perfect test. It does not detect all breast cancers. It is uncomfortable and anxiety producing. But it has the best scientific evidence available showing that it can help us cure more breast cancers. Until we can figure out how to cure all breast cancers, or prevent breast cancer from developing, screening mammography is important to increase the number of breast cancers we can cure. For more information on Washakie Medical Center's digital mammograms or other imaging services, call (307) 347-3221.