



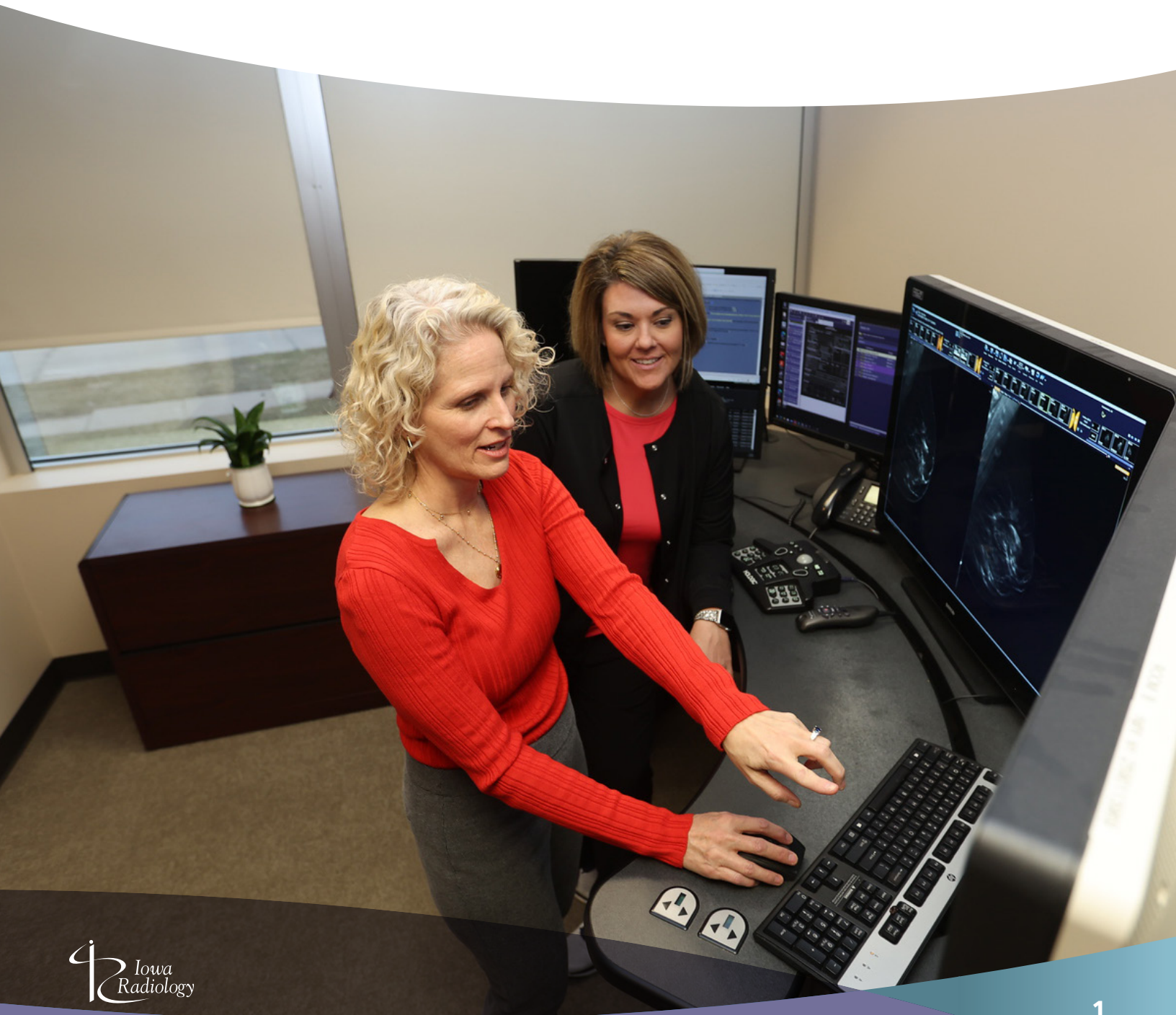
What You Need to Know About Your Mammogram

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Introduction

Mammography is a vital tool in the fight against breast cancer. The Society for Breast Imaging (SBI) and American College of Radiology (ACR) recommend that women undergo breast cancer risk assessment by age 25 and those at average risk begin annual mammography at age 40.¹ This guide will share some information about your breast cancer risk and how mammograms are important to your preventive health care plan. It will also explain how mammograms work and what you need to do to prepare. Finally, it will give you some insight into what will happen if your mammogram indicates any areas of concern.



Why Have a Screening Mammogram?

Some women may be tempted to skip their screening mammograms, either to avoid the discomfort associated with breast compression or because they fear receiving bad news. A screening mammogram requires only seconds of compression time for each breast, however, and innovations like SmartCurve, which features a curved design and software that takes breast shape into account, make it possible to capture clear images with less compression for greater comfort. Because each woman's body shape is unique, our technologists determine whether to use the SmartCurve feature on a case-by-case basis.



Early detection means better chances of survival and less invasive treatment.

If your mammogram does detect cancer, finding it as early as possible can give you the best chance of survival with the least invasive treatments possible. Breast cancers that are discovered through the presence of symptoms are generally larger and have more likely spread beyond the breast prior to detection than cancers found through screening mammography.² Mammography can enable doctors to identify cancer at earlier stages, and a long-term study of more than a half million women published in 2020 found a 34-41% decrease in breast cancer deaths within ten years of diagnosis among women who participated in mammography screening compared to those who did not.³

Breast Cancer Survival and Treatment Statistics

The size and extent of cancer at the time of detection are among the most important factors in determining a breast cancer patient's prognosis and course of treatment. As of January 2024, the American Cancer Society reports the following five-year survival rates for invasive breast cancer:

Extent of Cancer	% Surviving \geq 5 Years After Diagnosis
Localized within the breast	99%
Spread to nearby structures or lymph nodes	86%
Spread to distant parts of the body	31% ⁴

Those whose breast cancer is diagnosed early also tend to receive much less invasive and less debilitating treatments than later-stage patients. Most women with early-stage breast cancer will undergo surgery and often, additional treatments to prevent recurrence such as radiation, hormones, chemotherapy, and/or targeted therapies. Patients with metastatic disease, on the other hand, are primarily treated with systemic therapies, which include chemotherapy, targeted medications, hormones, and immunotherapy.⁵

Breast Cancer Risk



One in eight women is diagnosed with breast cancer

Breast cancer is the most common cancer among women in the U.S., and approximately one in every eight people assigned female at birth are diagnosed with the disease at some point in their lifetimes. For some women with additional risk factors, the odds of developing breast cancer are higher. Risk factors for breast cancer include

- Genetic predisposition (including a mutation of the BRCA1 or BRCA2 genes)
- Family history of breast cancer
- Personal history of breast cancer or certain benign breast conditions
- Previous radiation therapy to the chest
- Tobacco smoking
- Alcohol consumption
- Use of certain types of hormone replacement therapy
- Obesity
- Sedentary lifestyle
- Dense breast tissue

As with many cancers, breast cancer risk increases with age. Two out of every three invasive breast cancers are found in women aged 55 or older. Race can also influence risk. Black, Latina, and Asian women have a slightly lower risk of developing breast cancer at all. When they do, however, they are more likely to be diagnosed at younger ages with more aggressive, advanced-stage cancers.⁶

Mammograms are just part of an overall breast health plan. Like the ACR and SBI, we at Iowa Radiology advise women at average risk for breast cancer to get annual mammograms once they turn 40. If your risk is higher than average, discuss an appropriate screening and prevention plan with your health care provider, who may recommend steps such as

- Additional or more frequent screening exams
- Genetic counseling and testing
- Prophylactic medications or surgery⁷
- Lifestyle changes such as maintaining a healthy diet and exercise routine

A long-term study of nearly 16,000 Swedish women found that those who got exercise equivalent to more than one hour of walking per day had a 23% lower risk of developing breast cancer than those who reported low physical activity. The benefit was most pronounced in women who were perimenopausal or postmenopausal and those carrying excess weight.⁸

Risks Associated with Mammograms



Modern screening mammography is very safe.

When you get a mammogram, the machine uses X-rays, a form of ionizing radiation, to generate an image of your breast tissue. The two main risks associated with mammography are exposure to this radiation and the potential for false positive results.

RADIATION

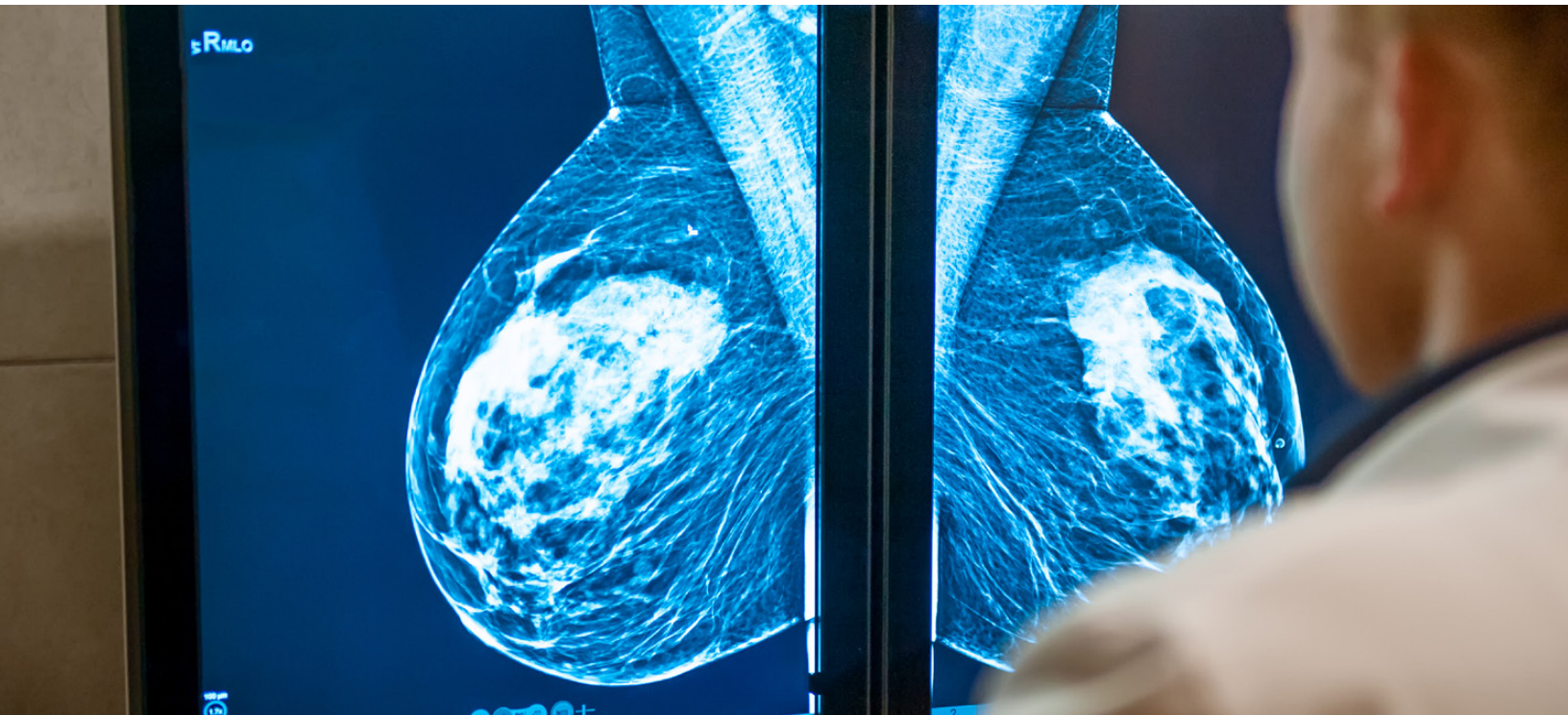
We are exposed to various forms of radiation every day. Solar radiation (sunlight) and radon, which occur in varying concentrations around the world, are the most common sources. Radiation dose is typically measured in millisieverts (mSv). Experts estimate that people in the U.S. receive an average natural annual dose of radiation of about 3 mSv from the natural environment.⁹

Modern low-dose 3-D mammography delivers just a fraction of the radiation that you're naturally exposed to every year.¹⁰ While radiology professionals adhere to the principle of ALARA ("as low as reasonably achievable") out of an abundance of caution, there is no strong evidence suggesting that such low doses of ionizing radiation are actually harmful. In fact, many experts assert that they can have a protective effect.¹¹

FALSE POSITIVES

If your radiologist determines that a mammogram shows areas of concern, you will be called back for further testing. This can be a stressful experience, but it's important to bear in mind that fewer than 1 in 10 women who are called back for follow-up after their screening mammograms are ultimately diagnosed with breast cancer.¹² Like all medical procedures, follow-up tests have their own risks. For example, in a biopsy, a small sample of tissue is removed from the breast so it can be examined under a microscope for cancer. It's a very low-risk procedure. However, some women experience bruising or swelling, infection or bleeding at the biopsy site, or altered breast appearance (depending on how much tissue is removed and how the breast heals).

Low-Dose 3-D Mammography



Traditional 2-D mammography relies upon two-dimensional X-ray images of the breast to detect possible areas of concern. Modern 3-D mammography, or tomosynthesis, is a process that incorporates many X-ray images taken from a range of angles to create a three-dimensional image of the breast that can be closely examined a millimeter at a time. Low-dose 3-D mammography allows for quicker procedure times and lower radiation doses than previously possible.

The computer can translate 3-D tomosynthesis images into 2-D images that are clearer and more detailed than images from a traditional 2-D mammogram. This allows radiologists to view a much clearer picture of structures within the breast tissue. The appearance of linear structures, radiating lines, and bright spots, which can be indicative of particular breast conditions, is enhanced with tomosynthesis.

3-D mammography allows for more accurate diagnosis of masses, distortions, and variations in density than traditional mammograms, especially in women with dense breast tissue.¹³ Women with dense breasts are at higher risk of developing breast cancer, so increased vigilance in detection is even more vital in women with denser breasts.¹⁴

Getting the clearest picture possible is especially important for women with dense breasts because both dense breast tissue and tumors appear white on traditional X-rays. As a result, cancerous abnormalities can be missed. Also, many benign conditions appear on mammograms; dense tissue can more frequently appear to be suspicious, resulting in many costly (and often stress-inducing) additional tests, such as biopsies of the questionable tissue.

Using 3-D tomosynthesis, studies have shown that practitioners make significantly fewer callbacks for diagnostic procedures while detecting more invasive cancers. A study of more than 1,000,000 women published in 2023 found that compared to traditional digital mammography, the addition of tomosynthesis resulted in more than a 13% reduction in callbacks (8.9% vs. 10.3%) and an approximately 18% increase in cancer detection (5.3 per 1,000 women vs. 4.5 per 1,000).¹⁵

How to Prepare for Your Mammogram



It is helpful for the radiologist to be able to compare the images obtained at your appointment to images from previous exams. Let us know when and where your last mammogram was performed, and if possible, we will contact that clinic and obtain previous images before you come in. Also let us know if you currently or have ever had breast implants, surgery, or other medical history relevant to your breast health.

Mammograms involve pressure on and manipulation of your breasts, so try to schedule your mammogram for the point in your menstrual cycle when your breasts are least tender (usually the week after your period).

DAY-OF DON'TS:

DON'T overdo caffeine, which can increase breast tenderness.

DON'T use deodorants or antiperspirants.

DON'T apply powders, lotions, perfumes, or creams on your arms or breasts.

DAY-OF DOS:

DO dress in a two-piece outfit so you can keep your lower half covered during the procedure.

DO bring along any deodorant, lotions, etc. you would like to apply after your procedure. (We also provide aerosol deodorant for your convenience.)

DO feel free to take an over-the-counter pain medication such as Advil (ibuprofen), Tylenol (acetaminophen), or aspirin if you experience pain following your procedure.

Callbacks and Follow-Ups

Your referring provider will receive a written report within one business day of your procedure, and you will receive a letter from us within one week with your results. If additional imaging is needed, we'll contact you to schedule follow-up at your convenience. If a mass or abnormality is detected in your breast, several indicators can help the radiologist to determine its nature. Remember that the vast majority of potentially suspicious things that show up on a mammogram are actually benign.

If you are called back, your radiologist will use additional diagnostic imaging, which can include additional mammogram views, to look more closely at the area of concern. Cancer requires a higher blood supply than non-cancerous growths, so ultrasound or MRI may also be used

to determine blood supply to the suspicious area. After these additional images are taken, if your radiologist believes the findings are benign, a six-month follow-up mammogram may be recommended as an extra precaution.

If there is a suspicious finding, your radiologist may recommend a biopsy to determine whether cancer is present. Every type of breast biopsy that Iowa Radiology offers, including X-ray guided (stereotactic), ultrasound, and MRI, is minimally invasive, non-scarring, non-surgical, and performed in an outpatient setting.

FAQ

Does it hurt?

No, the procedure should not hurt. You may feel some discomfort when your breast is compressed, but our modern equipment minimizes this. Our skilled technicians will help make the procedure as quick and comfortable as possible. If you experience tenderness afterward, it's okay to take an over-the-counter pain medication.

Can I ask for a female technologist?

Absolutely! We are happy to match you with a female technologist at your request.

How long does it take?

A screening mammogram, start to finish, takes between 15 and 30 minutes. Breast compression should last only a few seconds at a time.

What about the risks?

The low risks of mammography should be weighed against the great benefits of early breast cancer detection, including an improved survival rate and a potentially less aggressive course of treatment.



In Partnership With



Our focus is your good health!

Contact Iowa Radiology Today!

Endnotes

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