

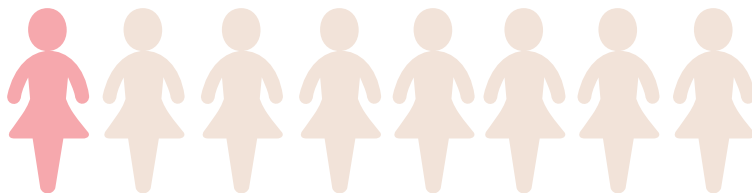
Breast Cancer Screening

BASICS & FAQs

Onsite
WOMEN'S HEALTH®



Statistics



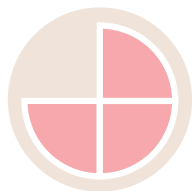
1 IN 8

women will develop breast cancer at some point in her life



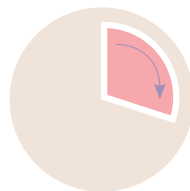
1 IN 6

breast cancers occur in women between the ages of 40-49



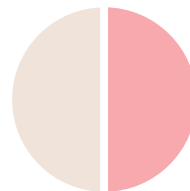
3 OUT OF 4

women diagnosed with breast cancer have no family history of the disease



UP TO 30%

of cancers will be missed with biennial screening in women 50+ years

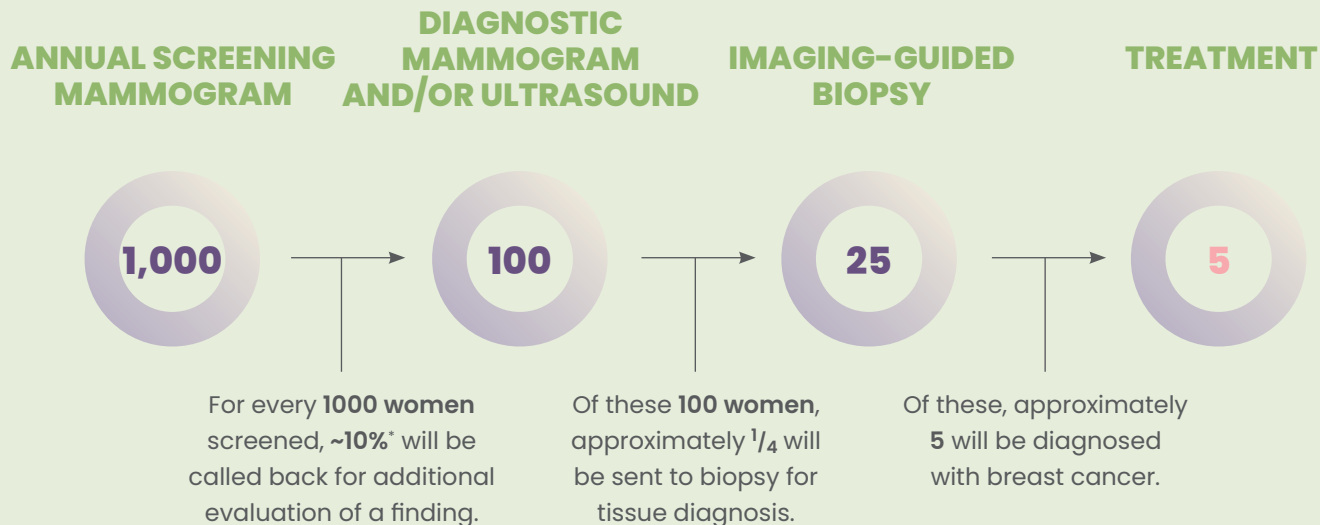


HALF

of all women 40 years and older have dense breast tissue, which increases breast cancer risk

Overview

Breast Cancer Screening Program



**Callback rate depends on the population being screened and by radiologist.
Onsite radiologists typically have callback rates between 5% - 12%.*

Imaging used for breast cancer screening

MAMMOGRAPHY

- Consists of standard (2D) and tomosynthesis (3D) X-ray images
- Two views of each breast, craniocaudal (CC) and mediolateral oblique (MLO)

All Onsite locations perform 3D Mammography (Tomosynthesis)

WHOLE BREAST ULTRASOUND

- May be performed either handheld or automated ("ABUS")

CONTRAST-ENHANCED MRI/ABBREVIATED MRI

- Multiple MR sequences, both with and without IV gadolinium contrast
- Indicated in high-risk women (in addition to screening mammography)

What is risk assessment, and how is it performed?

There are many models that estimate breast cancer risk. We use the Tyrer-Cuzick v.8 model, which incorporates a wide range of patient information (including surgical, hormonal, and family history, as well as breast density), and is a widely validated risk assessment tool.

Patients should undergo risk assessment for breast cancer by age 25.

THE FOLLOWING FACTORS CAN INCREASE A PATIENT'S RISK FOR DEVELOPING BREAST CANCER

- Older age
- Dense breast tissue
- Obesity
- Family history of breast or ovarian cancer
- A personal history of breast cancer
- History of chest radiation before age 30*
- High-risk lesions on breast biopsy
- Being a woman of color or of Ashkenazi Jewish descent
- Menstruation starting before age 12
- Menopause onset later than age 55
- Never having been pregnant or given birth



What's the difference between a **screening** mammogram and a **diagnostic** mammogram?

SCREENING IS PERFORMED ON ASYMPTOMATIC WOMEN.

*Screening should **NEVER** be performed on symptomatic patients, as cancer can be mammographically occult and/or excluded from standard views.*

DIAGNOSTIC EXAMS ARE PERFORMED TO ADDRESS A SPECIFIC CLINICAL SYMPTOM OR TO RESOLVE A MAMMOGRAPHIC FINDING.

A diagnostic exam can consist of specialized mammographic views and/or targeted ultrasound.

Screening Mammogram Guidelines

- All asymptomatic women 40 years of age or older
- Asymptomatic women between 30–40 years old who are at increased risk of breast cancer
- Women with bilateral, cyclic and/or non-focal breast pain
- Asymptomatic women who have undergone:
 - Diagnostic imaging with benign results (BI-RADS 1 or 2)
 - Needle or surgical biopsy with benign concordant results
 - Unilateral mastectomy

Diagnostic Mammogram Guidelines

- Women with a specific clinical concern, including a palpable mass or thickening, induration, axillary lymphadenopathy, bloody nipple discharge, skin changes or focal pain
- Women who need imaging follow-up:
 - Abnormal finding at screen (BI-RADS 0)
 - Imaging finding follow-up (BI-RADS 3)
- Women who are being treated or have been treated for breast cancer, as directed by the oncologic team

Risk-based Guidelines for Breast Cancer Screening

The following diagram outlines Onsite's approach to breast cancer screening using risk to stratify patients.

RISK LEVELS ARE AS FOLLOWS:

Average Risk = <15% lifetime risk

Intermediate Risk = between 15-20% lifetime risk

High Risk = >20% lifetime risk

Onsite Women's Health adheres to the American College of Radiology (ACR) Appropriateness Criteria® for breast cancer screening. Risk of breast cancer, as calculated by statistical models such as the Tyrer-Cuzick, stratifies patients into average, intermediate, or high lifetime risk of breast cancer. Management varies depending on risk, with high risk patients warranting the most aggressive screening.

AVERAGE RISK

Patients at Average Risk of Breast Cancer

Annual screening mammography starting at age 40

Contrast-enhanced breast MRI or screening breast ultrasound may be appropriate for women with dense breast tissue

HIGH RISK

Patients at High Risk of Breast Cancer

Annual screening mammography starting at age 30

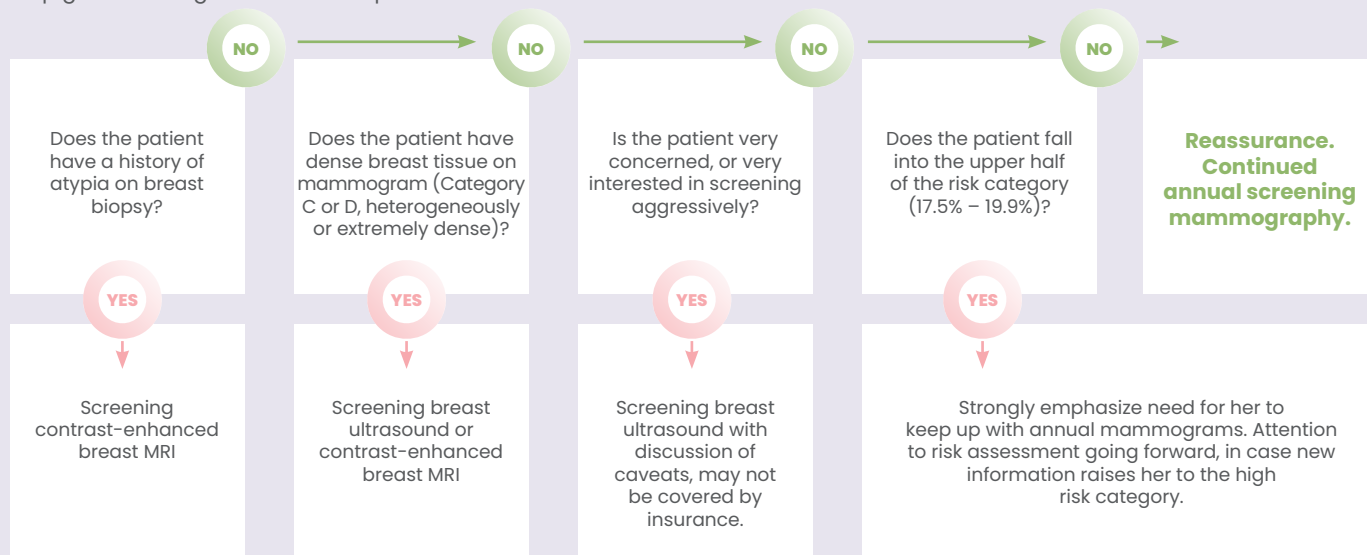
- Women with history of chest radiation before age 30 may start at age 25 or 8 years after radiation, whichever is later

Annual screening breast MRI

- No earlier than age 25
- If the patient has had an MRI, screening breast ultrasound adds no additional benefit
- If the patient cannot undergo MRI, screening breast ultrasound may be obtained as second-line test

INTERMEDIATE RISK

The ACR recommends recognition of the intermediate risk category in order to better manage specific subsets of patients that are likely to benefit from more aggressive screening. However, formal ACR guidelines for intermediate risk patients *per se* do not yet exist. Using existing data and Appropriateness Criteria,[®] Onsite Women's Health has created a questionnaire to help guide management of these patients.



FAQ

Why do some organizations recommend starting screening later, or screening less often?

In considering the potential harms of screening (false positive exams, over diagnosis, and patient distress) vs. the benefits (mortality reduction, less invasive treatments), various institutions have judged the balance of harms and benefits differently.

See Appendix: Table A for a summary of screening guidelines by organization.

Why do you support screening annually starting at age 40 (or earlier for high-risk women)?

Regardless of organization, all parties agree that annual screening starting at age 40 (as compared to age 50, and/or screening less frequently) saves the most lives. Screening less frequently means that aggressive cancers are likely to present at later stages, and results in a higher interval cancer rate (cancers diagnosed between screening exams).

Comparison: Screening Recommendation Outcomes¹

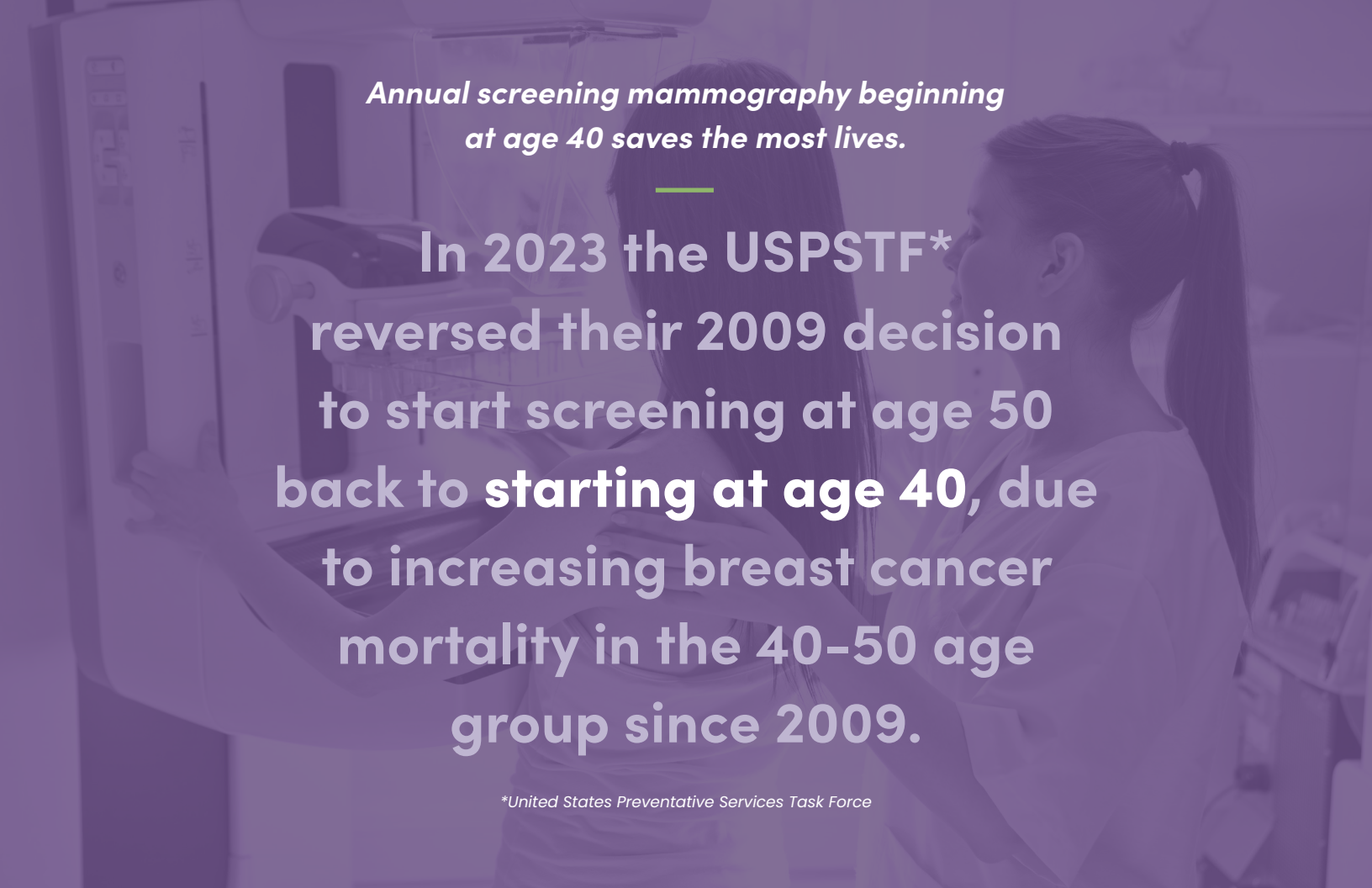
Screening regimen, patient age	Reduction in risk of dying of breast cancer	Number of women whose lives will be saved (per 100,000)	Number of life-years gained (per 100,000)
Yearly, 40–84	40%	1190	18,900 (+72%)*
Yearly, 45–54; every other year, 55–79	31%	925	14,900 (+35%)*
Every other year, 50–74	23%	695	11,000

* % increase in life-years gained compared to biennial 50–74

¹ Arleo EK, Hendrick RE, Helvie MA, Sickles EA. Comparison of Recommendations for Screening Mammography Using CISNET Models. *Cancer* 2017; 3673–3680.

Can a patient get a mammogram earlier than 40 if she’s not high risk?

Screening mammograms are not indicated in average risk women who are younger than 40, because breast cancer is less common in younger women. Therefore, the benefits of mammography do not outweigh the potential associated harms. If a woman is having a breast symptom, however, diagnostic imaging is indicated.

A woman in a white lab coat is operating a mammography machine. The image is overlaid with a semi-transparent purple filter. The text is centered over the image.

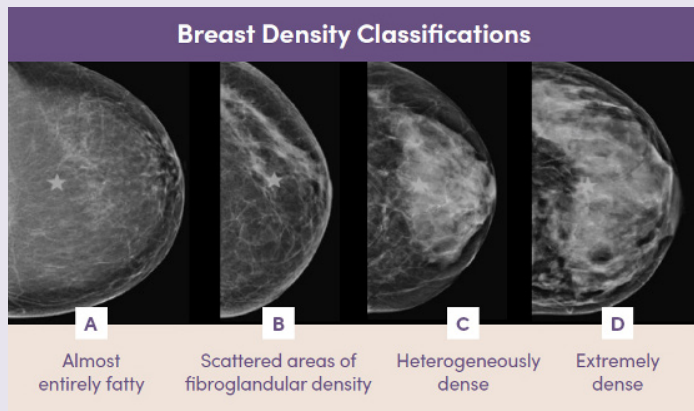
*Annual screening mammography beginning
at age 40 saves the most lives.*

**In 2023 the USPSTF*
reversed their 2009 decision
to start screening at age 50
back to starting at age 40, due
to increasing breast cancer
mortality in the 40–50 age
group since 2009.**

**United States Preventative Services Task Force*

What does “dense tissue” mean? Why is it important?

Breast density indicates how much fibroglandular (white) tissue is seen mammographically. Women in the heterogeneously and extremely dense categories are considered to have “dense tissue.” Dense tissue decreases the sensitivity of mammography, as illustrated by the star icon seen on the images below. The star, like a breast cancer, is harder to see as breast density increases. Denser tissue also confers increased risk of breast cancer.



In September 2024, federal law will require patient notification of their breast density (many states already have density notification language). Some states also mandate insurance coverage for supplemental screening in patients with dense tissue.

How is breast density determined?

Density is ultimately assigned by the radiologist interpreting the mammogram. We also utilize AI-based density assessment tools. These provide immediate information at the time of the mammogram (to facilitate supplemental screening, if appropriate), and can be used to calculate a patient’s breast cancer risk (using Tyrer-Cuzick v.8).

Do patients with dense breast tissue need supplemental screening?

We recommend that supplemental screening be a choice for all women with dense tissue, while recognizing that the cancer yield will be lower in average risk women compared to intermediate or high risk women. Using calculated lifetime risk of breast cancer can help guide screening choices, in the context of the patient’s preferences.

Density alone does not determine risk, but given its impact, recent ACR guidelines state that women with dense tissue may obtain contrast-enhanced MRI for supplemental screening, if desired. Screening breast US may also be obtained, if breast MRI is not feasible.

Note: High-risk women qualify for breast MRI, and should **only** have screening breast US if they are unable to have a breast MRI. Screening breast US is **not** recommended for average-risk women with non-dense tissue.

What if my patient is pregnant? Can she get a mammogram?

Yes. Mammography is a low-dose exam and is safe for pregnant women. ACOG and the ACR both support the use of clinically appropriate mammography in pregnant women (see references):



bit.ly/3Xj4Qf7



bit.ly/3Fh5hgs



bit.ly/3QAItwi

Screening and/or diagnostic mammography can be obtained in pregnant women. Imaging is particularly important for symptomatic pregnant patients, as pregnancy-associated breast cancer (PABC) is often detected late due to difficulty of physical exam and physiologic breast changes. Due to delayed diagnosis and aggressive tumor subtypes, PABC has a poorer prognosis than breast cancer not associated with pregnancy.

Pregnant patients who warrant breast imaging should be counseled that mammography can be performed safely at any time during pregnancy.

What if she's lactating?

If a patient needs breast imaging and is lactating, it helps to have her pump or nurse immediately prior to the exam. The exam will still be less sensitive than her non-lactating state, but is still useful.

I have a transgender patient. What are the guidelines?

TRANSGENDER PATIENT

Symptomatic

Standard diagnostic evaluation should be performed regardless of gender

Asymptomatic

Screening mammography may be appropriate: see Appendix, Table B for detailed recommendations



Table A: Society Guidelines by Parameter

RECOMMENDATION PARAMETER	ACR/SBI	ACOG	ACS	NCCN	USPSTF
Breast Examination					
Breast Self-Examination	—	Encourages breast self-awareness	Encourages breast self-awareness	Encourages breast self-awareness	Recommends against teaching patients
Clinical Breast Examination	—	May be offered every 1 to 3 years from 25–39 years of age and then annually	Not recommended	Recommends every 1 to 3 years from 25–39 years of age and then annually	Insufficient evidence
Mammography (by age)					
40 to 44 years	Annual	Offer annual or biennial	Offer annual	Annual	Biennial
45 to 49 years	Annual	Offer annual or biennial	Annual	Annual	Biennial
50 to 54 years	Annual	Annual or biennial	Annual	Annual	Biennial
55 to 74 years	Annual	Annual or biennial	Biennial, option to continue annual	Annual	Biennial
When to stop	No upper age limit unless severe comorbidities limit life expectancy	Shared decision-making in women 75+	When life expectancy is <10 years	When life expectancy is <10 years	Insufficient evidence for screening in women 75+

RECOMMENDATION PARAMETER	ACR/SBI	ACOG	ACS	NCCN	USPSTF
Special Consideration					
High-Risk Women	Annual mammography and breast MRI starting at age 25–30, depending on type of risk	Offer annual mammography and MRI starting at 30 years	Offer annual mammography and MRI starting at 30 years	Annual mammography, clinical breast examination every 6 to 12 months, consider annual MRI starting at 30 years, counsel on risks and benefits of supplemental screening	Insufficient evidence
Women with Dense Breasts	Consider supplemental screening in addition to annual mammography	Insufficient evidence	Insufficient evidence	Insufficient evidence	Insufficient evidence
Breast Cancer Risk assessment	All women, especially black women and women of Ashkenazi Jewish descent, should be evaluated for breast cancer risk by age 25			All women should have a breast cancer risk assessment starting at age 25	

Table B: Transgender Patient Screening Protocol

SCREENING MAMMOGRAPHY RECOMMENDATIONS FOR TRANSGENDER WOMEN

GROUP	RECOMMENDATION
Transgender women ≥50 years old with past or current hormone use	Annual mammography if the patient has: • estrogen or progestin use for >5 years • family history • body mass index >35 • known genetic mutation
Transgender women with no hormone use, or younger than 50 years old	Routine screening is not indicated unless the patient has other known risk factors, such as a personal history of breast cancer, or a known high-risk genetic mutation.

SCREENING MAMMOGRAPHY RECOMMENDATIONS FOR TRANSGENDER MEN

GROUP	RECOMMENDATION
Transgender men after bilateral mastectomy	Screening mammography not recommended
Transgender men who have had reduction mammoplasty	Screening mammography recommended according to usual recommendations for natal women
Transgender men who have not had breast surgery	Screening mammography recommended according to usual recommendations for natal women

Definitions

- **Transgender:** a person whose gender identity is different from the gender they were thought to be at birth
- **Natal sex:** the sex a person was assigned at birth
- **Transgender women:** people who are transitioning/have transitioned from male to female
- **Transgender men:** people who are transitioning/have transitioned from female to male

Parikh U, Mausner E, Chhor CM, Gao Y, Karrington I, Heller SL. Breast Imaging in Transgender Patients: What the Radiologist Should Know. Radiographics. 2020 Jan-Feb;40(1):13-27.

Chowdhry, DN and O'Connell, AM. Breast Imaging in Transgender Patients. February 27, 2020. Journal of Breast Imaging, Vol. 2, pg. 161-167



