



Allina Health  
CANCER INSTITUTE

## Allina Breast Conference 2024 Screening Mammography

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### HISTORICAL TRIAL

#### Swedish Two-County Trial: Impact of Mammographic Screening on Breast Cancer Mortality during 3 Decades<sup>1</sup>

Radiology

- Over 100,000 women (40-74y) divided into 2 arms:
  - Passive study population: usual care
  - Active study population: invited to screen

#### Findings:

- 1<sup>st</sup> breast cancer screening trial to show reduction in breast cancer mortality from screening with mammography alone.
- 30% reduction in breast cancer mortality among women invited to screen.
- Screening approximately 300 women for 10 years prevents 1 death from breast cancer.

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## HISTORICAL TRIAL

### Swedish Two-County Trial: Impact of Mammographic Screening on Breast Cancer Mortality during 3 Decades<sup>1</sup>

Radiology

- Significant reduction in breast cancer specific mortality in the population invited to screen.
- Absolute number of breast cancer deaths PREVENTED increases with follow up time.
- 42 years of life saved per 1,000 women invited to screen.

Figure 1

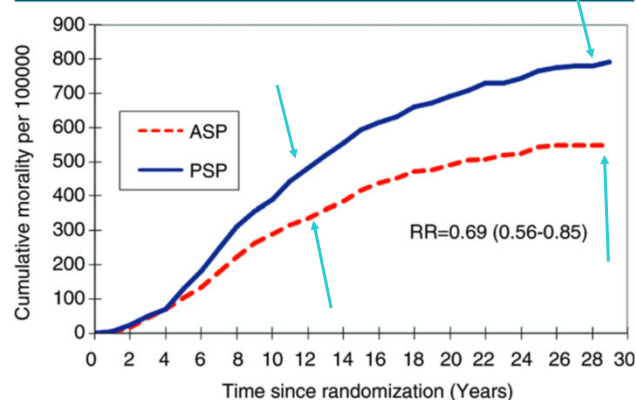


Figure 1: Graph shows cumulative mortality from breast cancer according to study group, as determined with local end point committee data.

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## SCREENING MAMMOGRAPHY CONFUSION

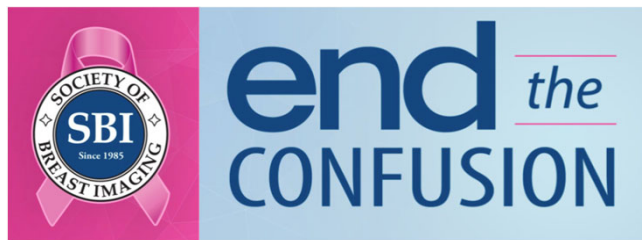
When do you start screening?

How often should you screen?

When should screening end?

No one in my family has breast cancer, why screen?

Varying national guidelines on screening mammography can make it challenging to explain the appropriate screening protocol for patients.



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## CURRENT SCREENING RECOMMENDATIONS

- Majority of organizations (ACR, SBI, ASBrS, ACS) recommend:

**Annual mammography screening beginning at age 40 for average risk women**

- USPSTF recently updated their recommendations (previously recommended beginning at age 50) and is almost there (but recommends Q2 year screening rather than annual).

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## END THE CONFUSION FACTS



**Annual** mammography screening beginning at age 40 for average risk women

Do I really have to do screening mammograms yearly?

**Even for women 50+, skipping a mammogram every other year would miss up to 30% of cancers.**

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## CURRENT SCREENING RECOMMENDATIONS

Annual mammography screening **beginning at age 40** for average risk women

- Breast cancer incidence increases around 40.
- Greatest mortality reduction, most lives saved and life years gained.
- 40% of all years of life saved by mammography are of women in 40s.

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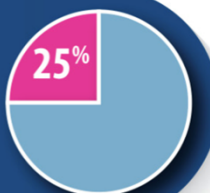
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## END THE CONFUSION FACTS



**40-49**  
**50-59**  
**60-69**  
**70-79**

There is no scientific or biological reason to delay screening until the age of 50. No decade of life – 40-49, 50-59, 60-69, or 70-79 – accounts for more than 25% of the cancers diagnosed each year.



— ABOUT —  
**1 IN 69**

women will be diagnosed with invasive breast cancer in their forties.

**40's**

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## CURRENT SCREENING RECOMMENDATIONS

Annual **mammography** screening beginning at age 40 for average risk women

Smaller size tumors  
Fewer nodal metastases  
Less grade progression



Treatment is more effective

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## END THE CONFUSION FACTS



I'm scared mammography will cause breast cancer...

The risk of causing breast cancer from the radiation of mammography is far LOWER than the likelihood of mammography detecting breast cancer for women 40+.

By not getting yearly mammograms at 40+, women increase their odds of dying from breast cancer, and treatment of any advanced cancers ultimately found will be more extensive and expensive.

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## END THE CONFUSION FACTS



I don't have a family history of breast cancer,  
do I need to screen?

**3/4**   
of women diagnosed  
with breast cancer have  
no family history of the  
disease and are not  
considered high risk.

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## CURRENT SCREENING RECOMMENDATIONS

Annual mammography screening beginning at age 40 for  
**average risk women**

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## AVERAGE RISK



- Overall, the average risk of a woman in the United States developing breast cancer ~13%.

### Gail Model (BCRAT):

- Age
- Age at menarche
- Age at first live birth of a child
- Number of affected mother or sisters
- Number of previous breast biopsies (whether positive or negative)
- Presence of atypical hyperplasia in a biopsy
- Race

### Tyrer-Cuzick (IBIS)

- Accounts for both personal and extensive family history risk factors
- Personal risk factors (ie: hormone therapy, breast density, obesity)

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Original Investigation | Oncology

### Race and Ethnicity-Adjusted Age Recommendation for Initiating Breast Cancer Screening

Tianhui Chen, MD, PhD; Elham Kharazmi, MD, PhD; Mahdi Fallah, MD, PhD

Black women were nearly twice as likely to die from breast cancer before age 50 than white women.

- The rate of breast cancer deaths among women ages 40 to 49 was:
  - 27 deaths per 100,000 person-years for Black women
  - 15 deaths per 100,000 person-years for White women
  - 11 deaths per 100,000 person-years for Hispanic, Asian or Pacific Islander, and American Indian or Alaska Native women

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## ADDITIONAL SCREENING SCENARIOS

- High Risk
- Transgender
- Pregnancy
- Age 75 and over

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## ADDITIONAL SCREENING SCENARIOS

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## HIGH RISK SCREENING: WHO MAY NEED SCREENING MAMMOGRAPHY BEFORE AGE 40?

| Population at Risk  | Current Screening Recommendation 2023                                   |
|---|---|
| Genetic mutation carriers and untested women with a 1 <sup>st</sup> degree relative with genetics based increased risk. | • annual DM/DBT (age 40 if annual MRI; age 30 if not)                   |
| Women with a calculated life-time risk of breast cancer of 20% or more.   | • annual DM/DBT (age 30)  |
| Chest or upper abdominal radiation (overlapping breast) at a young age (10Gy or more before age 30).                    | • annual DM/DBT (age 25 or 8 years after treatment, whichever is later) |
| Personal history (PH) of breast cancer OR Atypia/LCIS diagnosed <40y  | • annual DM/DBT (from age at diagnosis)                                 |

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## TRANSGENER BREAST CANCER SCREENING

EDUCATION

Allina Health

### Should You Have Breast Cancer Screenings?

*Breast cancer screening guidelines for transgender people*

#### Transfeminine (male-to-female)

patients with past or current feminizing hormone use adding up to 5 years or more

#### Transmasculine (female-to-male)

patients who have not had top surgery or mastectomy or who have had reduction mammoplasty (still have breast tissue)

Same screening guidelines as those born and living as female:

**Begin screening mammography at age 40 (for average risk)**

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## TRANSGENER BREAST CANCER SCREENING

EDUCATION

Allina Health

### Should You Have Breast Cancer Screenings?

*Breast cancer screening guidelines for transgender people*

#### Transmasculine (female-to-male)

patients who had top surgery or mastectomy (no breast tissue)

Do *not* qualify for breast cancer screening (regardless of masculinizing hormone use)

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## ADDITIONAL SCREENING SCENARIOS

- High Risk
- Transgender
- Pregnancy
- Age 75 and over

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## PREGNANCY

### American College of Radiology ACR Appropriateness Criteria® Breast Imaging of Pregnant and Lactating Women

**Variant 4:** Breast cancer screening during pregnancy. Age 40 years or older, any risk level. Initial imaging.

| Procedure                               | Appropriateness Category | Relative Radiation Level |
|---|--------------------------|--------------------------|
| Digital breast tomosynthesis screening  | Usually Appropriate      | ☻☻                       |
| Mammography screening                   | Usually Appropriate      | ☻☻                       |
| US breast                               | May Be Appropriate       | ○                        |
| MRI breast without and with IV contrast | Usually Not Appropriate  | ○                        |
| MRI breast without IV contrast          | Usually Not Appropriate  | ○                        |
| Sestamibi MBI                           | Usually Not Appropriate  | ☻☻☻                      |

**Variant 1:** Breast cancer screening during lactation. Initial imaging.

| Procedure                               | Appropriateness Category | Relative Radiation Level |
|---|--------------------------|--------------------------|
| Digital breast tomosynthesis screening  | Usually Appropriate      | ☻☻                       |
| Mammography screening                   | Usually Appropriate      | ☻☻                       |
| US breast                               | May Be Appropriate       | ○                        |
| MRI breast without and with IV contrast | Usually Not Appropriate  | ○                        |
| MRI breast without IV contrast          | Usually Not Appropriate  | ○                        |
| Sestamibi MBI                           | Usually Not Appropriate  | ☻☻☻                      |

**Variant 3:** Breast cancer screening during pregnancy. Age 30 to 39 years at elevated risk (intermediate or high risk). Initial imaging.

| Procedure                               | Appropriateness Category | Relative Radiation Level |
|---|--------------------------|--------------------------|
| Digital breast tomosynthesis screening  | Usually Appropriate      | ☻☻                       |
| Mammography screening                   | Usually Appropriate      | ☻☻                       |
| US breast                               | May Be Appropriate       | ○                        |
| MRI breast without and with IV contrast | Usually Not Appropriate  | ○                        |
| MRI breast without IV contrast          | Usually Not Appropriate  | ○                        |
| Sestamibi MBI                           | Usually Not Appropriate  | ☻☻☻                      |

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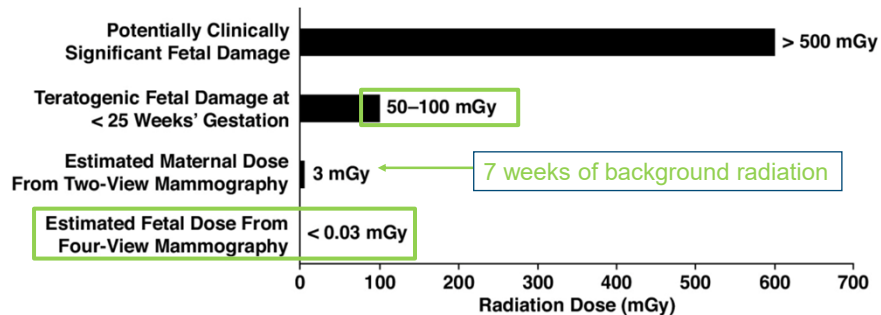
## PREGNANCY

**AJR**

American Journal of  
Roentgenology

### Current Recommendations for Breast Imaging of the Pregnant and Lactating Patient

Authors: Alexander J. Kieturakis, DO, Rifat A. Wahab, DO, Charmi Vijapura, MD, and Mary C. Mahoney, MD | [AUTHOR INFO & AFFILIATIONS](#)



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## ADDITIONAL SCREENING SCENARIOS

- High Risk
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- Age 75 and over

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## PATIENTS 75 AND OLDER

- Women over 74 can continue with annual screening mammograms as long as they are in reasonably good health and desire to be screened.

Benefits should be considered along with the possibility of:

- Recall for additional imaging
- Benign biopsy
- Risks of anxiety and detecting cancer that would not have otherwise become clinically apparent.

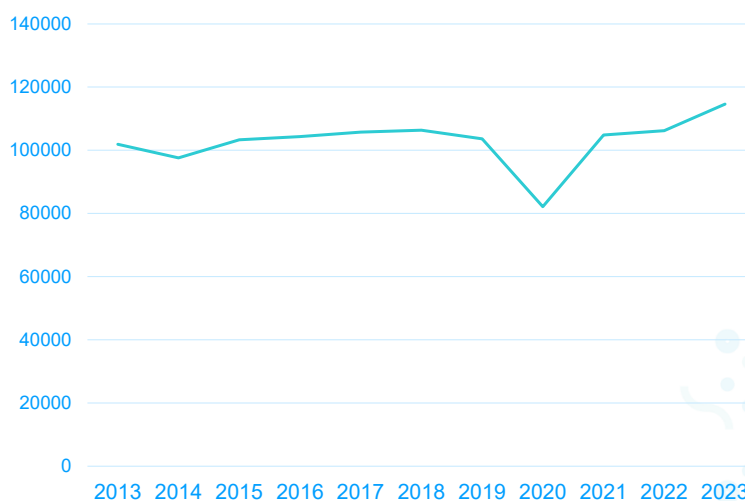


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## SCREENING MAMMOGRAM VOLUMES

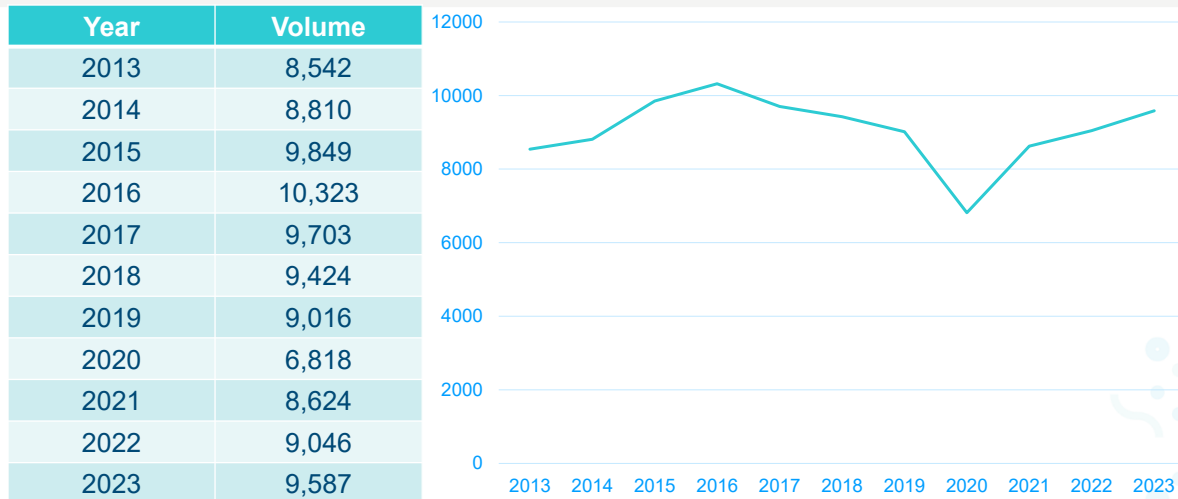
| Year | Volume  |
|------|---------|
| 2013 | 101,879 |
| 2014 | 97,586  |
| 2015 | 103,319 |
| 2016 | 104,286 |
| 2017 | 105,716 |
| 2018 | 106,348 |
| 2019 | 103,615 |
| 2020 | 82,163  |
| 2021 | 104,837 |
| 2022 | 106,205 |
| 2023 | 114,613 |



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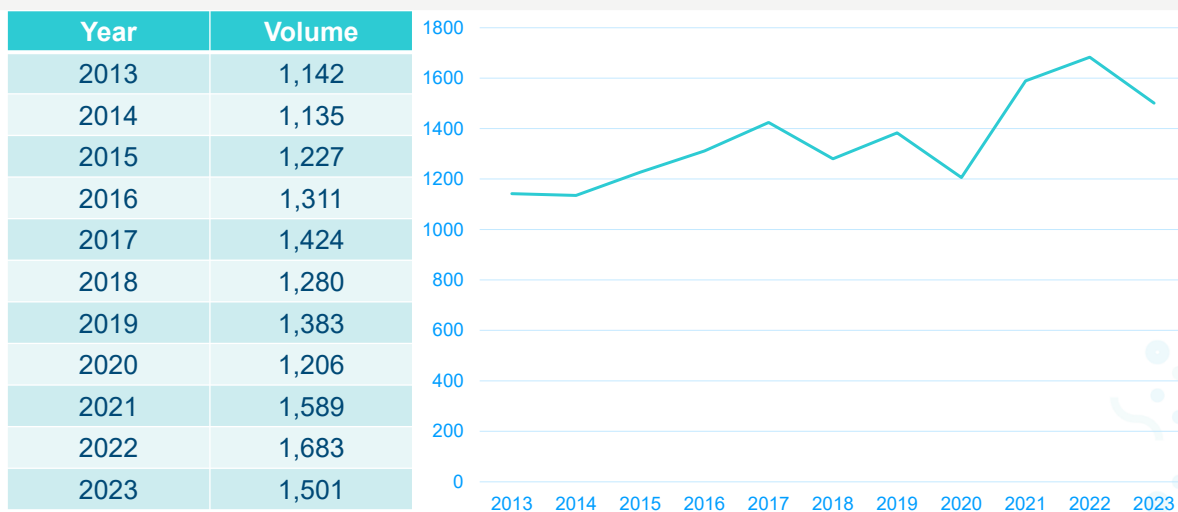
## SCREENING MAMMOGRAM CALLBACK VOLUMES



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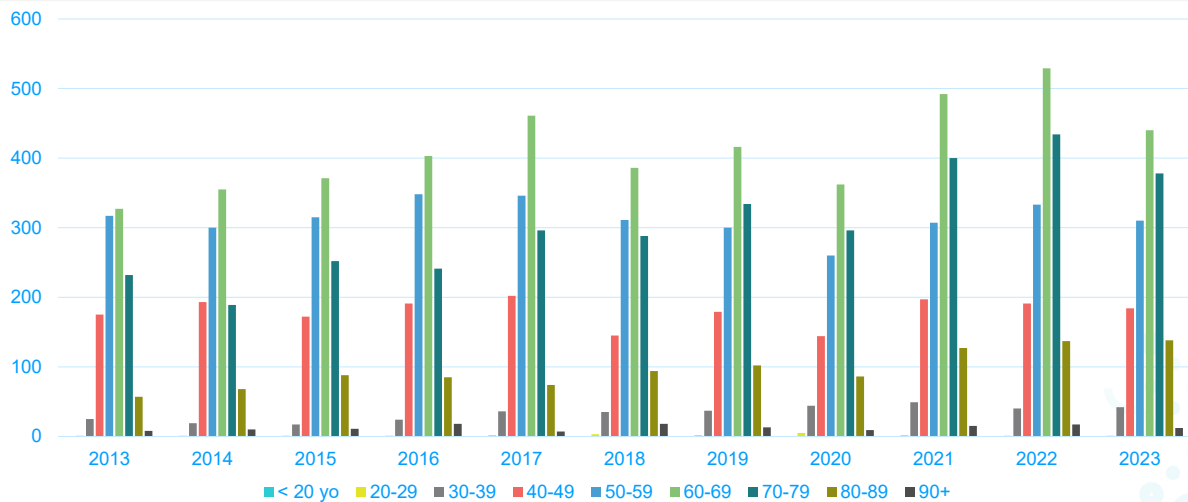
## BREAST CANCERS FOUND



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## BREAST CANCERS BY AGE 2013-2023



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Thank you

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## ALLINA HEALTH SCREENING STATISTICS

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## BREAST CANCERS BY AGE 2013-2023

|      | < 20 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90+ |
|------|------|-------|-------|-------|-------|-------|-------|-------|-----|
| 2013 | 0    | 1     | 25    | 175   | 317   | 327   | 232   | 57    | 8   |
| 2014 | 0    | 1     | 19    | 193   | 300   | 355   | 189   | 68    | 10  |
| 2015 | 0    | 1     | 17    | 172   | 315   | 371   | 252   | 88    | 11  |
| 2016 | 0    | 1     | 24    | 191   | 348   | 403   | 241   | 85    | 18  |
| 2017 | 0    | 2     | 36    | 202   | 346   | 461   | 296   | 74    | 7   |
| 2018 | 0    | 3     | 35    | 145   | 311   | 386   | 288   | 94    | 18  |
| 2019 | 0    | 2     | 37    | 179   | 300   | 416   | 334   | 102   | 13  |
| 2020 | 0    | 5     | 44    | 144   | 260   | 362   | 296   | 86    | 9   |
| 2021 | 0    | 2     | 49    | 197   | 307   | 492   | 400   | 127   | 15  |
| 2022 | 1    | 1     | 40    | 191   | 333   | 529   | 434   | 137   | 17  |
| 2023 | 0    | 1     | 42    | 184   | 310   | 440   | 378   | 138   | 12  |

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