

Misericordia University

## Misericordia Digital Commons

---

Student Research Poster Presentations 2026

Student Research Poster Presentations

---

2026

### The Role of Mammography in Breast Cancer Diagnosis

Olivia J. Maniskas  
*Misericordia University*

Follow this and additional works at: [https://digitalcommons.misericordia.edu/research\\_posters2026](https://digitalcommons.misericordia.edu/research_posters2026)



Part of the [Medicine and Health Sciences Commons](#)

---

#### Recommended Citation

Maniskas, Olivia J., "The Role of Mammography in Breast Cancer Diagnosis" (2026). *Student Research Poster Presentations 2026*. 14.

[https://digitalcommons.misericordia.edu/research\\_posters2026/14](https://digitalcommons.misericordia.edu/research_posters2026/14)

This Poster is brought to you for free and open access by the Student Research Poster Presentations at Misericordia Digital Commons. It has been accepted for inclusion in Student Research Poster Presentations 2026 by an authorized administrator of Misericordia Digital Commons. For more information, please contact [mcech@misericordia.edu](mailto:mcech@misericordia.edu).

# The Role of Mammography in Breast Cancer Diagnosis

Student Researcher: Liv Maniskas  
Faculty Advisor: Lynn Blazaskie, MS, R.T. (R) (ARRT)

## Introduction:

Breast cancer affects females and represents 15% of all new cancer in the United States. Mammography is an essential breast cancer screening and diagnostic tool. Routine mammograms are key to detecting breast cancer early. The five-year survival rate is 99% when caught early. (Cleveland Clinic, n.d.)

## Mammography:

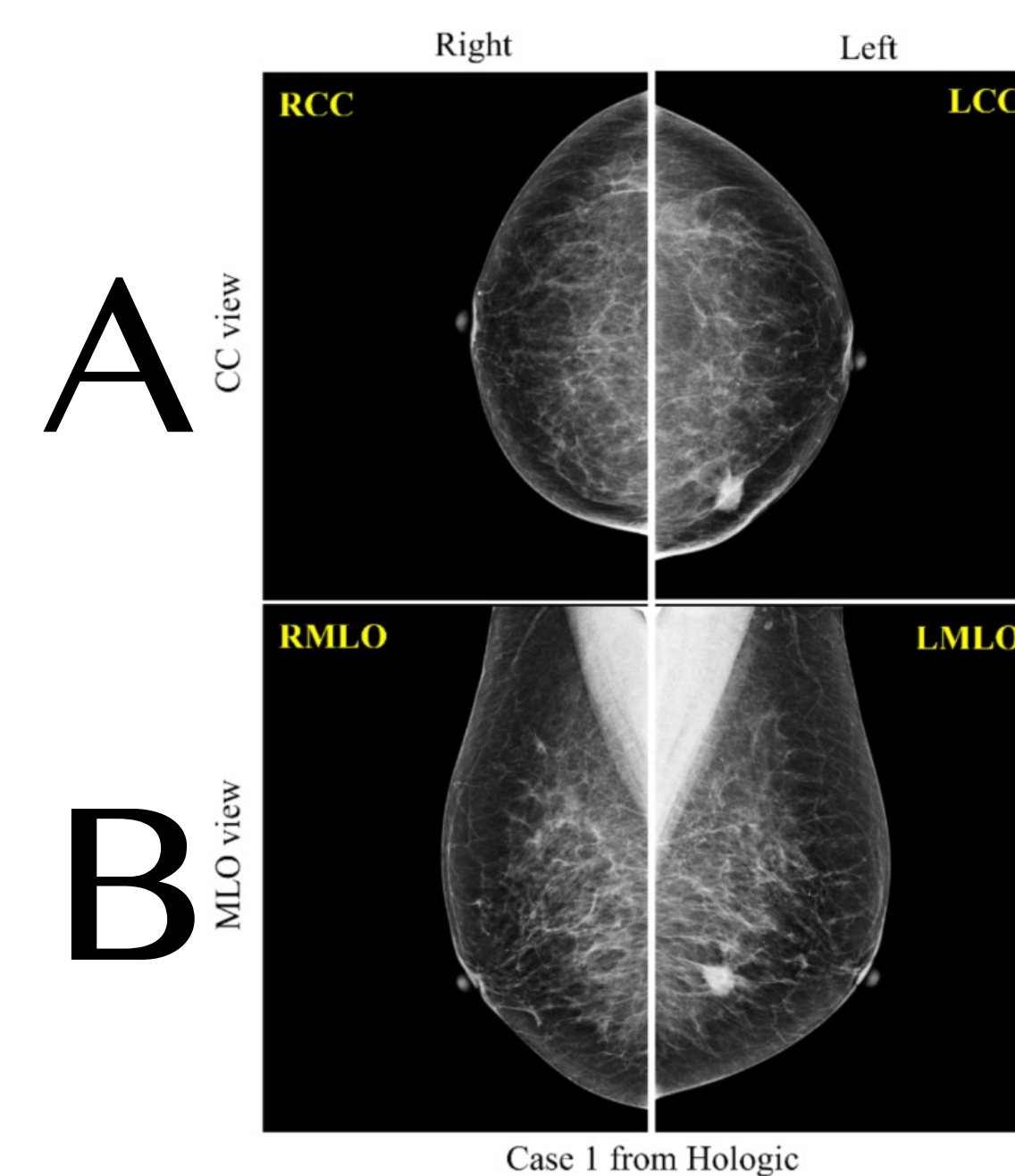
- A low-dose x-ray of breast tissue.
- Images demonstrate abnormal areas in breast tissue.
- Changes in breast tissue are detected to before symptoms present.
- Screening mammograms should begin at age 40, although your age and frequency depends on your risk. (Cleveland Clinic, n.d.)

## Method of Examination:

- Both breasts are routinely radiographed using craniocaudal (CC) and mediolateral oblique (MLO) projections.
- Image enhancement methods, such as spot compression and magnification technique are useful within diagnostic mammography
- Enhancing images is necessary to better characterize lesions and calcifications.
- The machine sends a low-dose x-ray through the compressed tissue.
- The detector transmits electronic signal to a computer to form a digital image.
- In symptomatic patients, the examination should not be limited to one breast.
- Both breasts should be examined for comparison purposes and because significant radiographic findings may be shown in a clinically normal breast. (Zeidan, 2022)

## Screening Mammogram:

- A routine mammogram performed for screening purposes. The combination of CC and MLO projections allow for best visualization of the greatest amount of breast tissue. (Zeidan, 2022)



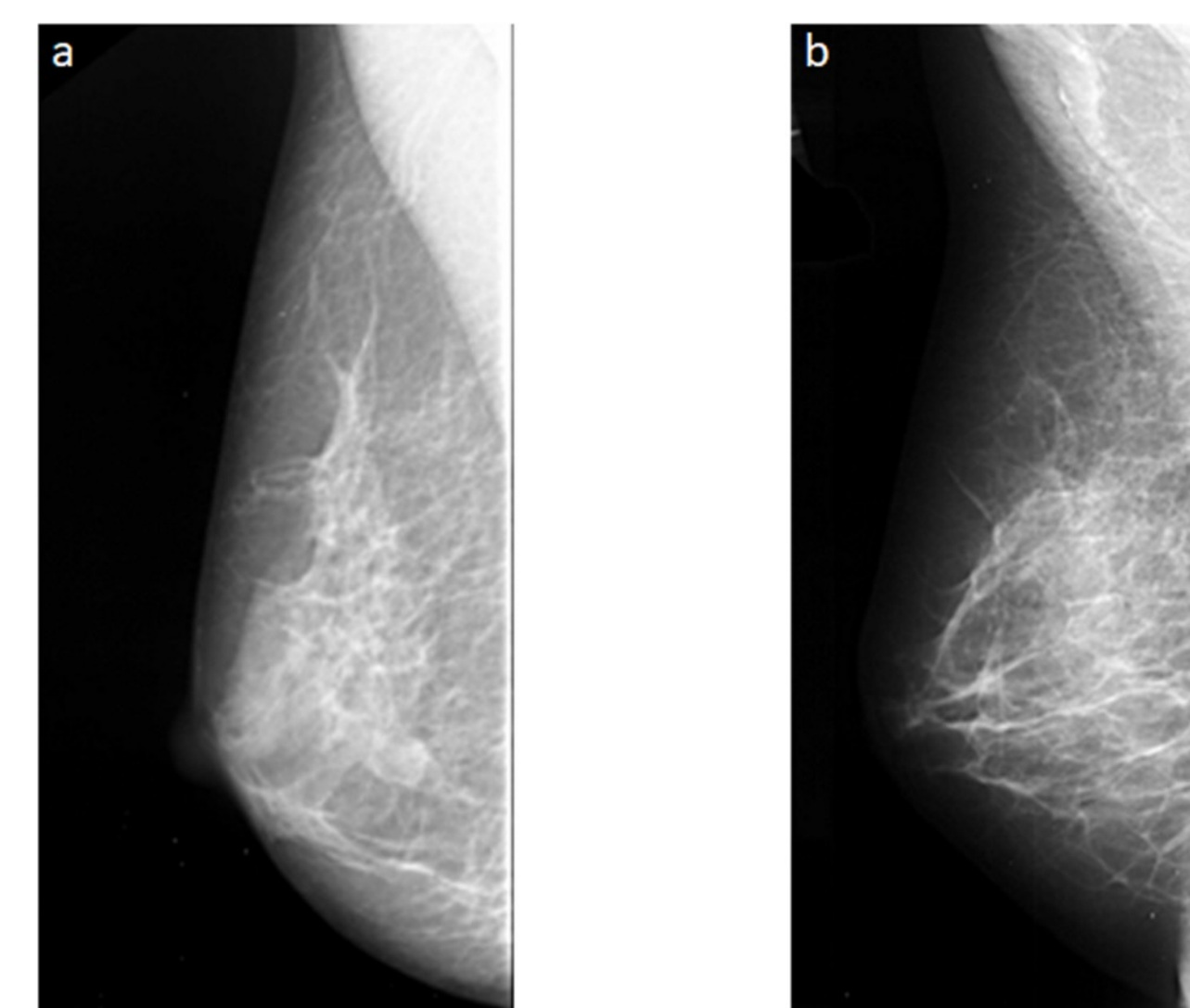
(Seo et al., 2025)

A- Craniocaudal (CC)

B- Mediolateral Oblique (MLO)

## Diagnostic Mammogram:

- Performed for specific areas of concern, additional views may be indicated as desired by radiologist.
  - Additional views may be indicated such as :
    - Exaggerated Craniocaudal (XCCL)
    - Mediolateral (ML)
    - Magnification view
- (Zeidan, 2022)



Mediolateral view (ML)

(Pesapane et al., 2025)

## Types of breast cancer: Invasive Ductal Carcinoma (IDC):

- Most common type of breast cancer.
- 80 % of all breast cancer.
- Begins in the ducts and grows into nearby breast tissue.

## Invasive Lobule Carcinoma (ILC):

- Second most common type of breast cancer.
- Starts in lobules in the breast and invades nearby breast tissue.
- If not treated, can spread to the lymph nodes.

## Ductal Carcinoma in Situ (DCIS):

- Occurs when cells within the duct are abnormal.
- Non-invasive breast cancer (may become invasive cancer over time).
- Abnormal cells have not spread to other tissues outside the duct.

## Lobular Carcinoma in Situ (LCIS):

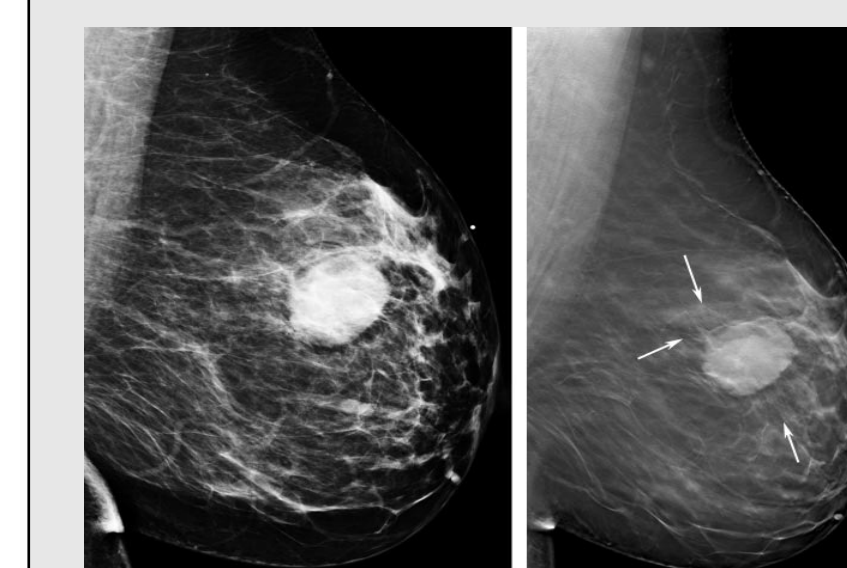
- Occurs when cells within the lobules (milk-producing glands) of the breast are abnormal but they do not grow through the walls of the lobules.
- Increase the risk of developing breast cancer.

(National Breast Cancer Foundation, n.d.)

## Statistics:

- Among all US women, breast cancer is the second most common cancer and cancer death. (Nicholson et al., 2024)
- Mammography screening reduces breast cancer mortality by 19% in women 40–74 years. (Schonberg, 2023)

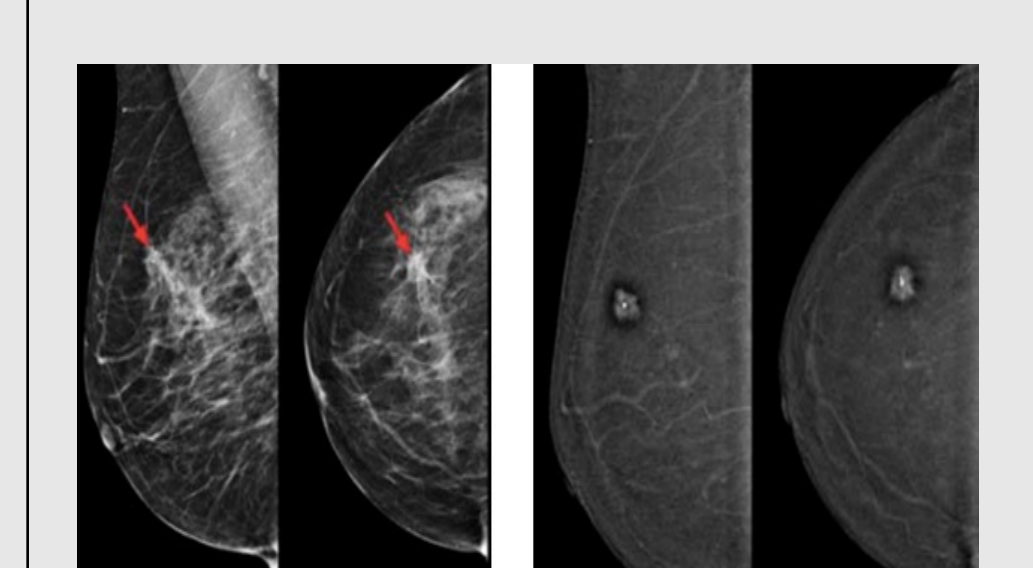
## Invasive Ductal Carcinoma (IDC)



MLO View

(Park et al., 2007)

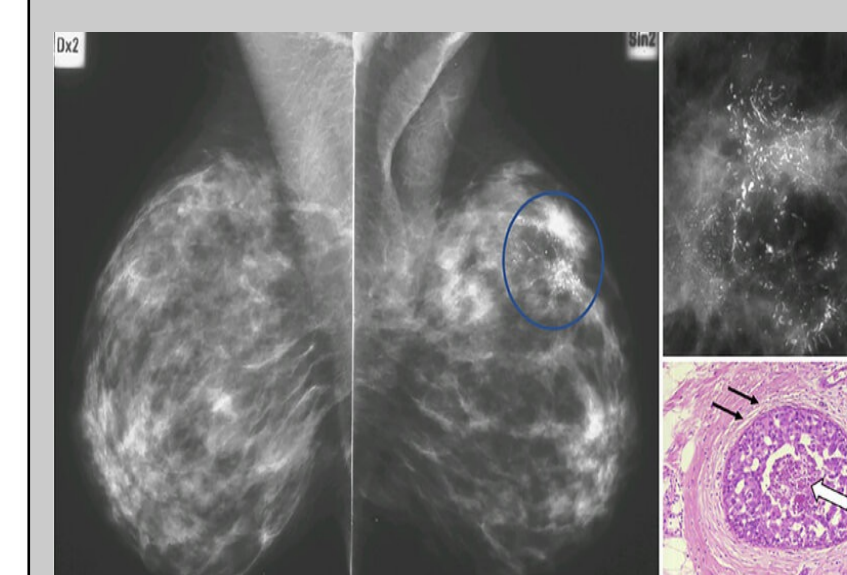
## Invasive Lobule Carcinoma (ILC)



MLO + CC View

(O'Brien, n.d.)

## Ductal Carcinoma in Situ (DCIS)



MLO View

(Omling et al., 2021)

## Lobular Carcinoma in Situ (LCIS)



Magnification View

(Yee, 2012)

## Conclusion:

In conclusion, mammography plays a critical role in the early detection and diagnosis of breast cancer, allowing for treatment at earlier and more manageable stages. Early detection increases survival rates. Routine screening can reduce the need for more treatments because cancers found early are easier to treat. Advances in imaging technology continue to enhance image accuracy and reduce patient discomfort, making screening more accessible and effective for women. Overall, mammography is one of the most essential tools in medical imaging for detecting breast cancer early and providing care for the long-term health effects of patients. (Komen, n.d.)