

Breast Imaging Protocol

Eastern Radiologists, Inc. Breast Imaging Network

Screening Mammography

Images: Routine CC and MLO views

Implant Patients: CC and MLO in both routine and implant displaced views

Asymptomatic patients including patients who have had a benign biopsy after initial follow-up study; *diffuse* breast pain; positive family history of breast cancer

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Screening Protocol:

- Women at average risk for breast cancer
 - ★ Annual screening from age 40
- Women with $\geq 20\%$ lifetime risk for breast cancer based on family history (both maternal and paternal)
 - ★ Yearly starting at age 30 or 10 years earlier than the age of diagnosis of the youngest relative (but not before age 25), whichever is later
- Women with mothers or sisters with pre-menopausal breast cancer
 - ★ Yearly starting at age 30 or 10 years earlier than the age of diagnosis of the youngest relative (but not before age 25), whichever is later
- Women at risk for breast cancer; women with certain BRCA1 and BRCA2 mutations or based on first degree relatives (mothers, sisters, daughters) who are proved to have BRCA mutations
 - ★ Yearly starting at age 30 or 10 years earlier than the age of diagnosis of the youngest relative (but not before age 25), whichever is later
- Women with histories of mantle radiation (usually for Hodgkin's disease) received between the ages of 10 and 30
 - ★ Yearly starting 8 years after the radiation therapy, but not before age 25

Diagnostic Mammography

Images for all diagnostic:

Routine CC and MLO

90° true lateral with abnormality closest to the image receptor (lateral abnormality gets ML while medial abnormality gets LM)

For additional imaging, please refer to specific diagnosis/abnormality

Palpable abnormality (identified by referring clinician, patient *or* technologist):

Mark abnormality with a triangular shaped marker

3 view diagnostic mammogram

2 compression views centered directly over palpable area

Directed breast ultrasound

Breast Pain (only diagnostic when pain is new onset and focal):

3 view diagnostic mammogram

2 compression views directly over site of focal pain

90° true lateral views of affected breast

Directed breast ultrasound

Lumpectomy patients: Diagnostic mammogram of the lumpectomy site at 6 month intervals for a period of 3-5 years, with the unaffected breast imaged with routine mammogram at regular yearly intervals

3 view diagnostic mammogram

90° true lateral views of affected breast

90° true lateral magnification view of the tumor bed

CC magnification view of the tumor bed

Mastectomy patients: The mastectomy site is not routinely imaged, even in patients with tissue reconstruction.

A clinical abnormality may have a complete diagnostic work up of the site.

Mastectomy patients with implant reconstruction need not be studied on the mastectomy side unless there specific questions regarding implant integrity or breast abnormality.

Subcutaneous mastectomy patients may have sufficient tissue to warrant imaging.

Nipple discharge: Documentation of patient history is critical; Diagnosis of discharge being unilateral, spontaneous, bloody or watery may get a recommendation of further evaluation; (bilateral, milky, greenish, opaque, etc. is not necessarily an indication for diagnostic mammogram or further evaluation)

Routine CC and MLO

90° true lateral

Compression view behind nipple

Short term follow-up mammogram:

Repeat same images originally obtained.

Calcifications:

3 view diagnostic mammogram

Magnification views of the calcifications in CC and 90° true lateral (ML/LM)

Diagnostic patients age 28 or under:

Focal finding (lump; focal, non-cyclical pain) as described by clinician or patient, perform directed breast ultrasound first.

If findings are:

Negative, Suspicious, Equivocal ▶ Diagnostic Mammogram Protocol

Characteristically benign ultrasound ▶ May not need further imaging

Pregnant Patients: Only symptomatic patients

Directed breast ultrasound first:

Negative, Suspicious, Equivocal ▶ Diagnostic Mammogram Protocol

Characteristically benign ultrasound ▶ No further imaging

Lactating Patients:

Delay screening until at last 3 months after lactation.

Diagnostic patients should nurse or pump in the mammogram facility immediately before imaging.

Male Patients:

Bilateral diagnostic mammogram

Directed breast ultrasound only if there is a discrete mass

Specimen Radiography:

Magnification images in 2 orthogonal projections with minimal compression

Breast Ultrasound

Palpable lump, abnormal mammogram, new onset and *focal* breast pain (clearly document reason for exam in MRS)

Scanned area: Direct scan of area of abnormality

★ Correlating lesion identified lesion identified ▶ no need to scan more

★ No lesion is found ▶ scan all area of interest

★ Lesion seen in only 1 view ▶ scan entire half of breast (ex. Lesion seen on medial cc only, scan entire medial half of breast)

Description of finding:

***Size**

- ***Cyst** ▶ record at least greatest dimensions
- *Solid lesions ▶ record all 3 dimensions
- *Multiple lesions ▶ record largest and smallest

Orientation: Scan and label as radial and anti-radial

Location: Location in breast and probe orientation

*** Words**

- *ex. ARAD LEFT 4 o'clock 3 cm from nipple
- *ex. RADIAL RIGHT 2 o'clock Zone 1 A
 - **ZONES: 1, 2, 3, Subareolar, Axillary
 - Depth: A, B, C (optional)

***Graphical**

- *Accurate placement of icon on breast, turned to indicate probe direction
- *Indicate correlation to area of concern

***Character of scanned abnormality**

- *Simple cyst
- *Debris filled cyst
- *Hypoechoic nodule
- *Solid nodule/mass
- *Complex cyst (use only if definite elements of solid tissue and fluid)