

# Breast Imaging

This exam content evaluates the candidate's knowledge and skills related to the clinical practice of breast imaging. The domain encompasses mammography, ultrasound, and breast MRI technologies. Screening and diagnostic concepts as well as interventional and therapeutic procedures will be included.

Included in this document:

[Domain Critical Concepts](#)

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## **Domain Critical Concepts**

1. Recognize cancer on:
  - a. Mammography
  - b. Ultrasound
  - c. MRI
2. Differentiate benign vs malignant calcifications
3. Recognize benign processes in the breast
4. Recognize and understand management of breast abscess
5. Recognize male breast cancer vs gynecomastia
6. Understand rad-path correlation for breast biopsy results—concordant versus discordant
7. Correctly use BI-RADS assessment categories
8. Understand breast interventional procedures—indications, approach, technique, complications

## **Domain Blueprint**

1. Screening: 1%-5%
  - a. Anatomy
  - b. Lesion detection/CAD
  - c. Risk analysis (demographics)
2. Regulations/Standards: 1%-5%
  - a. BI-RADS
  - b. Medical audit
  - c. MQSA
3. Technique: 1%-5%
  - a. Views
  - b. Positioning
  - c. Equipment
  - d. Image display/MRI CAD/US harmonics/workstations/etc.
4. Pathology: 5%-10%
  - a. Benign breast disease
  - b. High risk lesions
  - c. Invasive ductal NOS
  - d. DCIS

- e. Special cancer types
- 5. Symptomatic: 5%-10%
  - a. Discharge
  - b. Lump/thickening
  - c. Nipple retraction/skin changes
  - d. Pain
- 6. Inflammatory: 1%-5%
- 7. Calcifications: 10%-15%
  - a. Benign
  - b. Malignant
- 8. Masses: 10%-15%
  - a. Benign
  - b. Malignant
- 9. Architectural distortion: 1%-5%
- 10. Asymmetry: 1%-5%
- 11. Lymph nodes: 1%-5%
- 12. Male: 1%-5%
- 13. Post-operative breast: 1%-5%
- 14. BC Workup: 5%-10%
  - a. Staging/surgical planning
  - b. Specimen radiography
  - c. Post BCT
- 15. Anatomy 1%-5%
- 16. Breast MRI 5%-10%
  - a. Normal physiology and anatomy
  - b. Kinetics
  - c. Pathology

## **Domain Overview**

1. Regulatory/Standards of Care
  1. Components and desired goals of the medical audit for breast cancer detection
  2. Appropriate application of the Breast Imaging Reporting and Data System (BI-RADS) terminology and assessment categories
  3. Mammography Quality Standards Act (MQSA) requirements
  4. Quality determinants of mammography, breast ultrasound, and breast MRI, including positioning, image processing, artifacts, optimal technique, and equipment
2. Screening
  1. Indications
  2. Normal anatomy (mammography, ultrasound, MRI)
  3. Lesion detection and localization
  4. Computer-aided detection
  5. Breast cancer risk factors, including the identification and management of women at high risk for breast cancer
3. Diagnostic Breast Imaging
  1. Appropriate mammographic views for work-up of a breast lesion
  2. Evaluate and manage women and men with breast symptoms
    1. Palpable masses

2. Breast thickening
3. Nipple discharge
4. Nipple retraction
5. Skin changes
6. Pain
3. Appearance and management of inflammatory processes in the breast
  1. Benign
  2. Malignant
4. Role of imaging in surgical staging and surgical planning in women with recently diagnosed breast cancer
5. Normal and abnormal appearance after surgical procedures
  1. Breast implants
  2. Breast augmentation
  3. Breast reduction
  4. Breast reconstruction
  5. Normal and abnormal appearance of breast-conserving therapy
4. Pathology
  1. Appearance and management of benign breast lesions, high-risk lesions, ductal carcinoma in situ, invasive ductal carcinoma, and other special types of breast carcinoma
  2. Appearance and causes of benign and malignant male breast disease
5. Imaging findings
  1. Characteristics of benign and malignant breast calcifications
  2. Characteristics of benign and malignant breast masses
  3. Identify and appropriately manage imaging findings
    1. Mammography
      1. Abnormal calcifications
      2. Masses
      3. Asymmetries
      4. Architectural distortion
    2. Ultrasound
      1. Masses
      2. Architectural distortions
      3. Normal anatomic structures
    3. Breast MRI
      1. Masses
      2. Non-mass findings
      3. Background parenchymal enhancement
  4. Identify and understand the causes of abnormal lymph nodes on mammography, ultrasound, or MRI
6. Breast Intervention
  1. Percutaneous breast biopsy techniques
    1. Wire localization/Mag seed placement
    2. Core biopsy
    3. Vacuum-assisted biopsy
    4. Fine-needle aspiration
    5. Galactography
    6. Cyst aspiration

2. Specimen radiography
3. Concordant versus discordant percutaneous biopsy results for imaging appearance of a breast abnormality and appropriate management
4. Patient safety