



ULTRASOUND

Tissue composition (screening only)	a. Homogeneous background echotexture – fat b. Homogeneous background echotexture – fibroglandular c. Heterogeneous background echotexture	
Masses	Shape	Oval Round Irregular
	Orientation	Parallel Not parallel
	Margin	Circumscribed Not circumscribed - Indistinct - Angular - Microlobulated - Spiculated
	Echo pattern	Anechoic Hyperechoic Complex cystic and solid Hypoechoic Isoechoic Heterogeneous
	Posterior features	No posterior features Enhancement Shadowing Combined pattern
Calcifications	Calcifications in a mass	
	Calcifications outside of a mass	
	Intraductal calcifications	
Associated features	Architectural distortion	
	Duct changes	
	Skin changes	Skin thickening Skin retraction
	Edema	
	Vascularity	Absent Internal vascularity Vessels in rim
	Elasticity assessment	Soft Intermediate Hard
	Special cases	Simple cyst
Clustered microcysts		
Complicated cyst		
Mass in or on skin		
Foreign body including implants		
Lymph nodes – intramammary		
Lymph nodes – axillary		
Vascular abnormalities		AVMs (arteriovenous malformations/ pseudoaneurysms) Mondor disease
Postsurgical fluid collection		
Fat necrosis		



MAMMOGRAPHY

Breast composition	a. The breasts are almost entirely fatty b. There are scattered areas of fibroglandular density c. The breasts are heterogeneously dense, which may obscure small masses d. The breasts are extremely dense, which lowers the sensitivity of mammography		
Masses	Shape	Oval Round Irregular	
	Margin	Circumscribed Obscured Microlobulated Indistinct Spiculated	
	Density	High density Equal density Low density Fat-containing	
	Calcifications	Typically benign	Skin Vascular Coarse or “popcorn-like” Large rod-like Round Rim Dystrophic Milk of calcium Suture
Suspicious morphology		Amorphous Coarse heterogeneous Fine pleomorphic Fine linear or fine-linear branching	
		Distribution	Diffuse Regional Grouped Linear Segmental
			Architectural distortion
Asymmetries			Asymmetry Global asymmetry Focal asymmetry Developing asymmetry
	Intramammary lymph node		
	Skin lesion		
	Solitary dilated duct		
Associated features	Skin retraction		
	Nipple retraction		
	Skin thickening		
	Trabecular thickening		
	Axillary adenopathy		
	Architectural distortion		
Location of lesion	Calcifications		
	Laterality		
	Quadrant and clock face		
	Depth		
Distance from the nipple			



MAGNETIC RESONANCE IMAGING

Amount of fibroglandular tissue (FGT)	a. Almost entirely fat b. Scattered fibroglandular tissue c. Heterogeneous fibroglandular tissue d. Extreme fibroglandular tissue	Associated features	Nipple retraction Nipple invasion Skin retraction Skin thickening Skin invasion Direct invasion Inflammatory cancer Axillary adenopathy Pectoralis muscle invasion Chest wall invasion Architectural distortion	
Background parenchymal enhancement (BPE)	Level	Minimal Mild Moderate Marked	Fat containing lesions	
	Symmetric or asymmetric	Symmetric Asymmetric		
Focus		Location of lesion	Lymph nodes Normal Abnormal Fat necrosis Hamartoma Postoperative seroma/hematoma with fat	
Masses	Shape	Oval Round Irregular	Kinetic curve assessment Signal intensity (SI)/time curve description	
	Margin	Circumscribed Not circumscribed - Irregular - Spiculated		
	Internal enhancement characteristics	Homogeneous Heterogeneous Rim enhancement Dark internal septations		
Non-mass enhancement (NME)	Distribution	Focal Linear Segmental Regional Multiple regions Diffuse	Implants	
	Internal enhancement patterns	Homogeneous Heterogeneous Clumped Clustered ring		
Intramammary lymph node		Implant material and lumen type	Saline Silicone - Intact - Ruptured Other implant material Lumen type - Single - Double - Other	
Skin lesion		Implant location	Retroglandular Retropectoral	
Non-enhancing findings	Ductal precontrast high signal on T1W		Abnormal implant contour	Focal bulge
	Cyst		Intracapsular silicone findings	Radial folds Subcapsular line Keyhole sign (teardrop, noose) Linguine sign
	Postoperative collections (hematoma/seroma)		Extracapsular silicone	Breast Lymph nodes
	Post-therapy skin thickening and trabecular thickening		Water droplets	
	Non-enhancing mass		Peri-implant fluid	
	Architectural distortion			
Signal void from foreign bodies, clips, etc.				

BI-RADS® ASSESSMENT CATEGORIES

Category 0: Mammography: Incomplete – Need Additional Imaging Evaluation and/or Prior Mammograms for Comparison
Ultrasound & MRI: Incomplete – Need Additional Imaging Evaluation

Category 1: Negative

Category 2: Benign

Category 3: Probably Benign

Category 4: Suspicious
 Mammography & Ultrasound:
 Category 4A: Low suspicion for malignancy
 Category 4B: Moderate suspicion for malignancy
 Category 4C: High suspicion for malignancy

Category 5: Highly Suggestive of Malignancy

Category 6: Known Biopsy-Proven Malignancy

For the complete Atlas, visit acr.org/birads