



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	
	Calcifications	
Location of lesion	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	
Background parenchymal enhancement (BPE)	Level	Minimal		Nipple invasion	
		Mild		Skin retraction	
		Moderate		Skin thickening	
		Marked		Skin invasion	Direct invasion
	Symmetric or asymmetric	Symmetric		Inflammatory cancer	
		Asymmetric			
Focus			Fat containing lesions	Axillary adenopathy	
Masses	Shape	Oval		Pectoralis muscle invasion	
		Round		Chest wall invasion	
		Irregular		Architectural distortion	
	Margin	Circumscribed		Lymph nodes	Normal
		Not circumscribed			Abnormal
		- Irregular - Spiculated			
Internal enhancement characteristics	Homogeneous	Location of lesion	Fat necrosis		
	Heterogeneous		Hamartoma		
	Rim enhancement		Postoperative seroma/hematoma with fat		
	Dark internal septations				
Non-mass enhancement (NME)	Distribution	Focal	Kinetic curve assessment Signal intensity (SI)/time curve description	Location	
		Linear		Depth	
		Segmental	Initial phase	Slow	
		Regional			Medium
		Multiple regions			Fast
		Diffuse		Delayed phase	Persistent
	Internal enhancement patterns	Homogeneous	Plateau		
		Heterogeneous	Washout		
		Clumped	Implants	Implant material and lumen type	Saline
		Clustered ring			Silicone
- Intact					
- Ruptured					
Other implant material					
Lumen type					
- Single					
- Double					
- Other					
Implant location	Retroglandular				
	Retropectoral				
Abnormal implant contour	Focal bulge				
	Intracapsular silicone findings	Radial folds			
Subcapsular line					
Keyhole sign (teardrop, noose)					
Linguine sign					
Extracapsular silicone	Breast				
	Lymph nodes				
Water droplets					
Peri-implant fluid					

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