**Recommended Readings for Residents on Breast Rotation**

**Primary texts:**

ACR BI-RADS Atlas 5th Edition

Ikeda, DM, Miyake, KK. Breast Imaging: The Requisites, 3rd edition. St Louis: Elsevier, 2017. ISBN 9780323329040. Available on Countway

Georgian-Smith D, Lawton T. Breast Imaging and Pathologic Correlations: A Pattern-Based Approach, 1st edition. Lippincott, 2014. ISBN 9781451192698. Available on Countway.

Kopans, D. Breast Imaging, 3rd Edition. Available on Countway. (Great text, although not up to date with BIRADS terminology)

Cardenosa, Gilda. Clinical Breast Imaging: The Essentials, 2017. Available on Countway.

**Other texts/resources:**

Harvey JA, March DE. Making the Diagnosis: A Practical Guide to Breast Imaging, 1st edition. Saunders, 2013. ISBN 9781455722846

Case Review:

Brennecke CM. Breast Imaging Case Review Series, 2nd edition. Saunders. 2012. ISBN 978-0323087223

Radprimer question bank

Jake Mandell’s Core Radiology book – refresher before starting 2nd and 3rd year rotations

**First Year:**

Helpful to download ACR BI-RADS quick reference card

<https://www.acr.org/~/media/ACR/Documents/PDF/QualitySafety/Resources/BIRADS/Posters/BIRADS-Reference-Card_web_F.pdf?la=en>

First week:

ACR-BIRADS Mammography Atlas 5th Edition

ACR-BIRADS Ultrasound Atlas 5th Edition

Basic Principles Georgian-Smith Ch 1

Technical Aspects of Mammography Image Acquisition

Requisites Ch 1 pages 1- 14

Image Evaluation and Artifacts Requisites Ch 1 pages 14-18

Preoperative Needle Localization Requisites Ch 6 pages 246-253

Second week:

Mammogram Analysis and Interpretation Requisites Ch 2

Mammographic Analysis of Breast Calcifications Requisites Ch 3

Mammographic and Ultrasound Analysis of Breast Masses Requisites Ch 4

Problems and Solutions in Breast Evaluation Kopans Ch 22

Third week:

Breast Ultrasound Principles Requisites Ch 5

Breast Cancer Treatment-Related Imaging and Postoperative Breast

Requisites Ch 8

US of breast masses categorized as BI-RADS 3, 4, and 5: pictorial review of factors influencing clinical management. Raza S, Goldkamp AL, Chikarmane SA, Birdwell RL. Radiographics. 2010 Sep;30(5):1199-213. doi: 10.1148/rg.305095144. Review.

The Breast Imager's Approach to Nonmammary Masses at Breast and Axillary US: Imaging Technique, Clues to Origin, and Management. Oliff MC, Birdwell RL, Raza S, Giess CS. Radiographics. 2016 Jan-Feb;36(1):7-18. doi: 10.1148/rg.2016150029. Review.

Fourth week:

Multiple bilateral masses detected on screening mammography: assessment of need for recall imaging. Leung JW1, Sickles EA. AJR Am J Roentgenol. 2000 Jul;175(1):23-9.

Periodic mammographic follow-up of probably benign lesions: results in 3,184 consecutive cases. Sickles EA. Radiology. 1991 May;179(2):463-8.

Preoperative Radioactive Seed Localization for Nonpalpable Breast Lesions: Technique, Pitfalls, and Solutions. Goudreau SH, Joseph JP, Seiler SJ. Radiographics. 2015 Sep-Oct;35(5):1319-34. doi: 10.1148/rg.2015140293. Epub 2015 Aug 14. Review.

Radioactive Seed Localization Versus Wire Localization for Lumpectomies: A Comparison of Outcomes. Sharek D, Zuley ML, Zhang JY, et al. AJR 2015 204:4, 872-877.

**Second Year:**

READ: ACR Appropriateness Criteria: Breast Cancer Screening, Breast Pain, Evaluation of Nipple Discharge, Evaluation of the Symptomatic Male Breast, Monitoring Response to Neoadjuvant Systemic Therapy for Breast Cancer, Nonpalpable Mammographic Findings, Palpable Breast Masses, Stage I Breast Cancer. (https://acsearch.acr.org/list)

First week:

Shapes of Mass Georgian-Smith Ch 2- 22

Radiologist's role in breast cancer staging: providing key information for clinicians. Lee SC, Jain PA, Jethwa SC, Tripathy D, Yamashita MW. Radiographics. 2014 Mar-Apr;34(2):330-42. doi: 10.1148/rg.342135071.

Benign and Probably Benign Lesions Kopans Ch 14

Second week:

Margins of Mass Georgian-Smith Ch 23-39

Strategies to Increase Cancer Detection: Review of True-Positive and False-Negative Results at Digital Breast Tomosynthesis Screening. Korhonen KE, Weinstein SP, McDonald ES, Conant EF. Radiographics. 2016 Nov-Dec;36(7):1954-1965. Epub 2016 Oct 7.

Mammographic appearance of Breast Cancers Kopans Ch 15

Third week:

Shapes of Calcifications Georgian-Smith Ch 40-54

Developing Asymmetries at Mammography: A Multimodality Approach to Assessment and Management. Chesebro AL, Winkler NS, Birdwell RL, Giess CS. Radiographics. 2016 Mar-Apr;36(2):322-34. doi: 10.1148/rg.2016150123. Review.

Fourth week:

Architectural Distortion Georgian-Smith Ch 55-57

Asymmetries Georgian-Smith Ch 58, 59

Ductal Ectasia Georgian-Smith Ch 60, 61

Lymph Nodes Georgian-Smith Ch 62,63

Skin Thickening Georgian-Smith Ch 64,65

Clinical Breast Problems and Unusual Breast Conditions Requisites Ch 10

Tomosynthesis-detected Architectural Distortion: Management Algorithm with Radiologic-Pathologic Correlation. Durand MA, Wang S, Hooley RJ, Raghu M, Philpotts LE. Radiographics. 2016 Mar-Apr;36(2):311-21. doi: 10.1148/rg.2016150093. Review.

**Third Year:**

First week:

Mammographic and Ultrasound-Guided Breast Biopsy Procedures

Requisites Ch 6 pages 218-245

Breast Implants and the Reconstructed Breast Requisites Ch 9

The Altered Breast Kopans Ch 17

Troubleshooting to Overcome Technical Challenges in Image-guided Breast Biopsy. Chesebro AL, Chikarmane SA, Ritner JA, Birdwell RL, Giess CS. Radiographics. 2017 May-Jun;37(3):705-718. doi: 10.1148/rg.2017160117. Epub 2017 Apr 14.

Multimodality Imaging-based Evaluation of Single-Lumen Silicone Breast Implants for Rupture. Seiler SJ, Sharma PB, Hayes JC, Ganti R, Mootz AR, Eads ED, Teotia SS, Evans WP. Radiographics. 2017 Mar-Apr;37(2):366-382. doi: 10.1148/rg.2017160086. Epub 2017 Feb 10.

Second week:

MRI of Breast Cancer and MRI-Guided Breast Biopsy

Requisites Ch 7

ACR-BIRADS MRI Atlas 5th Edition

The Male Breast Kopans Ch 18

Third week:

Background parenchymal enhancement at breast MR imaging: normal patterns, diagnostic challenges, and potential for false-positive and false-negative interpretation. Giess CS, Yeh ED, Raza S, Birdwell RL. Radiographics. 2014 Jan-Feb;34(1):234-47. doi: 10.1148/rg.341135034.

Quality Assurance in Mammography and the MQSA,

Computed –Aided Detection

Requisites Ch 1 pages 18-28

MQSA

<https://www.acr.org/~/media/ACR/Documents/Accreditation/Mammography/MQSA%20and%20Accreditation%20RSNA07.pdf>

Fourth week:

Communication and Accountability in Breast Imaging Cardenosa Ch 13

Second-look US: how to find breast lesions with a suspicious MR imaging appearance. Park VY, Kim MJ, Kim EK, Moon HJ. Radiographics. 2013 Sep-Oct;33(5):1361-75. doi: 10.1148/rg.335125109.

What radiologists need to know about diagnosis and treatment of inflammatory breast cancer: a multidisciplinary approach. Yeh ED, Jacene HA, Bellon JR, Nakhlis F, Birdwell RL, Georgian-Smith D, Giess CS, Hirshfield-Bartek J, Overmoyer B, Van den Abbeele AD. Radiographics. 2013 Nov-Dec;33(7):2003-17. doi: 10.1148/rg.337135503.

Distinguishing breast skin lesions from superficial breast parenchymal lesions: diagnostic criteria, imaging characteristics, and pitfalls. Giess CS, Raza S, Birdwell RL.Radiographics. 2011 Nov-Dec;31(7):1959-72. doi: 10.1148/rg.317115116.