


Mammography Tips and Tricks 2.0

Louise Miller, R.T.(R)(M)(ARRT), CRT(M), FSBI, FNCBC
 Director of Education, Mammography Educators

presented by: **Robyn Hadley, R.T.(R)(M)**
 Breast Imaging Consultant, Mammography Educators




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Mammography Tips and Tricks 2.0

- Supplemental Views During Screening Exams
- Image Evaluation
- Positioning
- Technologist Tips
- Clear Communication




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Mammography Tips and Tricks 2.0

- **Supplemental Views During Screening Exams**
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Supplemental Views During Screening Exams

- Standard Screening Views
 - CC & MLO
- Supplemental Views
 - XCCL-Exaggerated Craniocaudal Lateral
 - AC-Anterior Compression
 - IMF-Inframammary Fold
 - NIP-Nipple in Profile
 - LM/ML-Lateromedial/Mediolateral



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Supplemental Views During Screening Exams

ACR PRACTICE PARAMETER FOR THE PERFORMANCE OF SCREENING AND DIAGNOSTIC MAMMOGRAPHY

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II. SPECIFICATIONS OF THE EXAMINATION

A. Screening Mammography

1. The screening examination should ideally be limited to technically adequate bilateral craniocaudal (CC) and mediolateral oblique (MLO) views. However, additional views may be required to visualize breast tissue more effectively.

2. The mammographic quality of the captured breast should include, when possible, standard implant in GSE CC and MLO views as well as standard breast views in the CC and MLO projections.

3. DBI may be performed.

4. Compared to standard mammography (SM), it has been found to increase the number of cancers detected and to decrease the recall rate, with benefits realized over multiple years of screening (22)(3). These advantages have been found to be especially pronounced in certain populations, including patients under age 50 and patients with dense breast tissue (1, 2, 3)(4). Research, implementation time does increase. For further information, see the ACR Clinical Practice Guideline for the Performance of Digital Breast Tomosynthesis (DBT) (11).

5. DBI may be used in patients with implants and is typically only performed on ipsilateral breast views (1).

6. The interreading clinician does not need to be present at the facility to monitor the examination when the patient is imaged.

II. SPECIFICATIONS OF THE EXAMINATION

B. Diagnostic Mammography


1. A diagnostic mammogram may include full-field CC, MLO, and/or supplemental views to evaluate an area of clinical or imaging concern.

2. Supplemental mammographic views may include spot compression, spot compression with magnification, or other special views (2)(21-23).

3. When determining which views to perform, the distance from the area of concern to the target detector (or image receptor) should be considered.

4. DBI may be performed.

5. Lesion characterization may be improved with DBT, especially for noncalcified lesions, spiculated masses, and asymmetries (17).

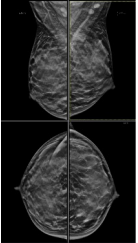



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Supplemental Views During Screening Exams

- When should I add a supplemental view?
- Why should I add a supplemental view?

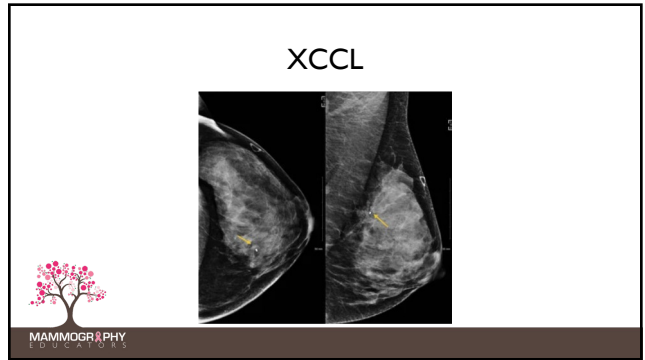



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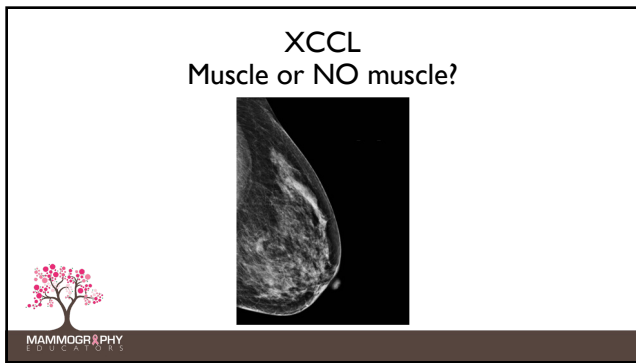
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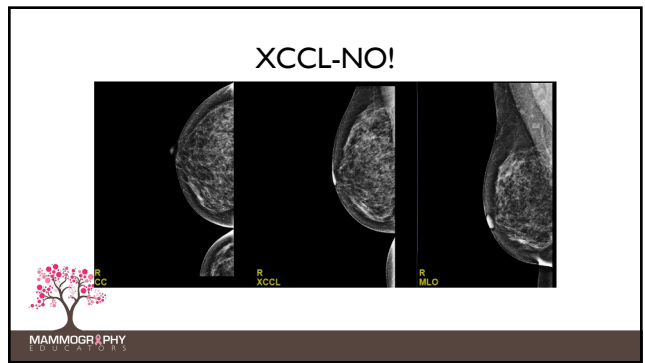
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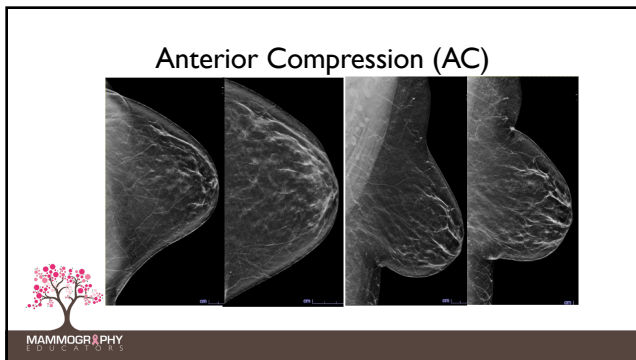
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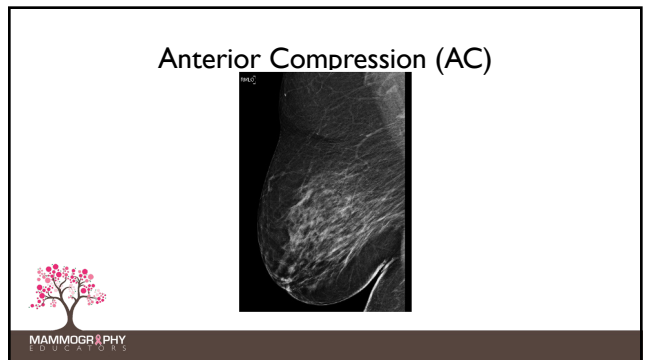
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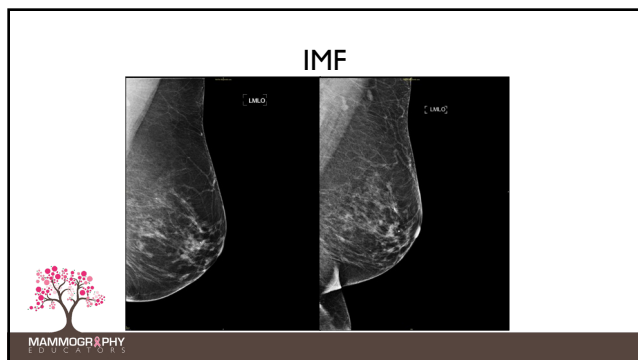
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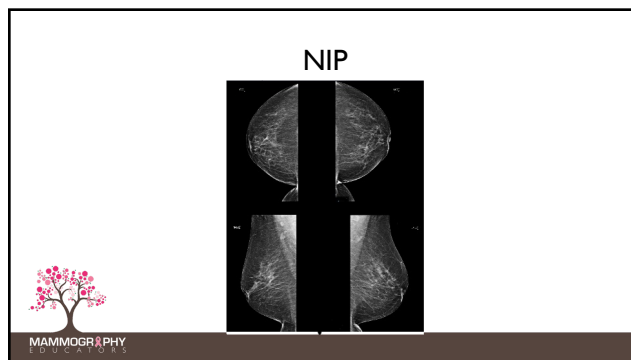
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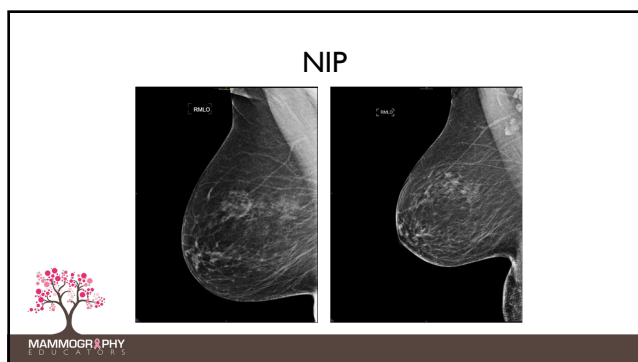
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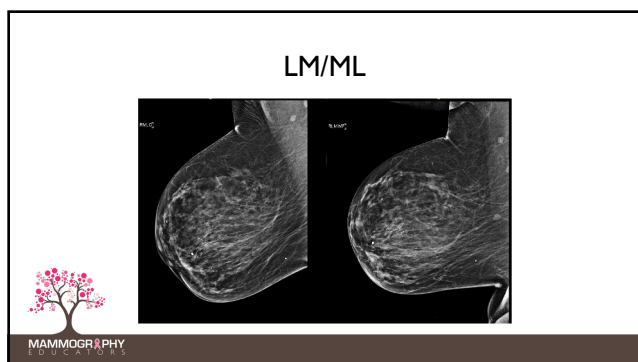
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- **Image Evaluation**
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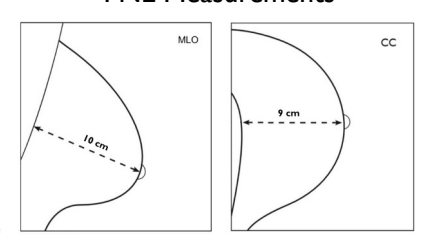

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How to Correctly Measure the PNL

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PNL Measurements

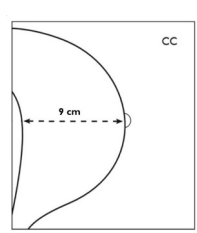




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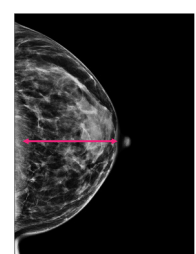

PNL Measurements

Measurement of the CC View:

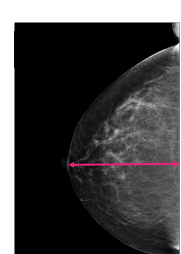

- Measurement is made from the base of the nipple to the anterior margin of the pectoralis muscle (if visualized) OR the edge of the image
- Select the measurement that is the greatest

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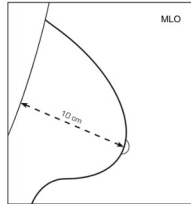



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PNL Measurements

Measurement of the MLO View:

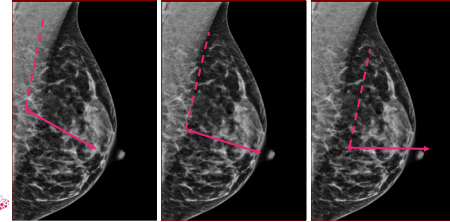
- Measure from the base of the nipple to the anterior margin of the pectoralis muscle where the intersection can be measured at a 90-degree angle



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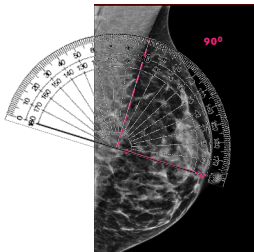
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Which is correct?



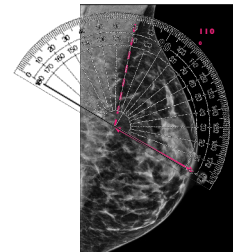
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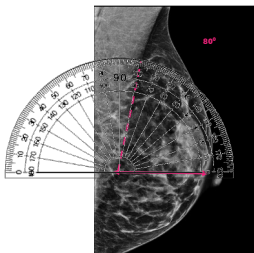
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- Image Evaluation
- **Positioning**
- Tech Tips
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Image Evaluation - Positioning Tips

Goals:

- Increase PNL measurement on the CC view
- Visualization of the IMF



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Image Evaluation

- **Increase PNL measurement on the CC View**
- Visualization of the IMF
- Image Centering on MLO



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Short PNL

- The measurement on the CC is "short" compared to measurement on the MLO
- *PNL measurement on the CC view should be within 1.0 cm of the PNL measurement on the MLO view*



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Possible Adverse Effects

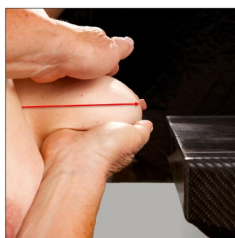
- Possible exclusion of posterior breast tissue.
- Improper elevation will potentially exclude superior breast tissue.
- Decreases the possibility of visualizing pectoralis muscle on the CC when it could otherwise be included.



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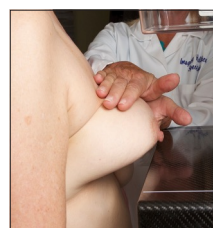
1. Elevate the breast/IMF and adjust the height of the IR



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2. Pull Breast onto the IR with Both Hands



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3. Anchor the Breast



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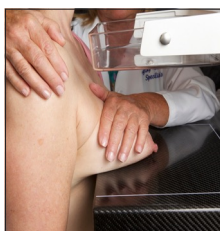
4. Place your elbow and forearm at the mid-thoracic region of her spine and gently "push" her forward



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Relax Patient's Shoulder With Your Hand



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Corrective Action

- The technologist's hand should be on the patient's shoulder (on the side you are imaging), making sure it is relaxed and down.
- Check that the compression paddle is directly adjacent to the rib cage.



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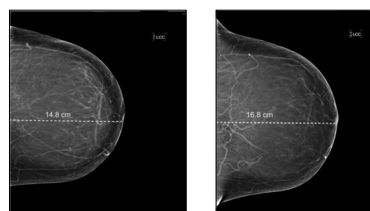
5. Climb up the chest wall



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PNL Measurements on the CC



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Image Evaluation

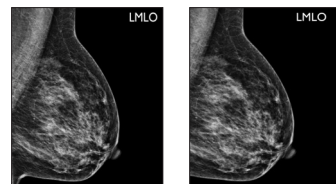
- Increase PNL on the CC
- **Visualization of the IMF**
- Image Centering on MLO



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Inadequate Visualization of the IMF



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Possible Adverse Effect

Without visualization of the IMF, we cannot be certain that all of the posterior, inferior breast tissue (particularly the medial area) has been included.



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Corrective Actions

- Check the patient's position. She must be facing the machine with both feet, hips and shoulders forward.
- Make sure the bottom of the IR is later/behind the IMF.



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Corrective Actions

- Have the patient step sideways (medially), so that the bottom of the IR is directly below the plane of the nipple - approximately halfway between the umbilicus and the lateral edge of the thorax.
- The corner of the IR should NOT be directly above the umbilicus.



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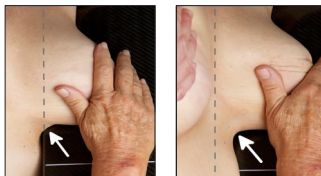
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Proper Placement of the Patient/IR



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Corrective Actions

- Elevate the breast in the “up and out” maneuver.
- Have patient flatten her other breast and hold it up.
- Do not let go until compression is complete.



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Corrective Actions

- **Elevate the breast in the “up and out” maneuver.**
- Have patient flatten her other breast and hold it up.
- Do not let go until compression is complete.



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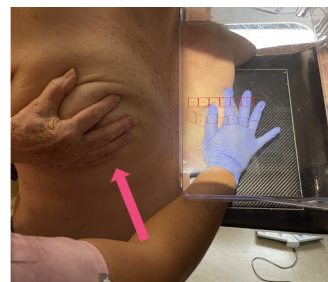
Corrective Actions

- Elevate the breast in the “up and out” maneuver.
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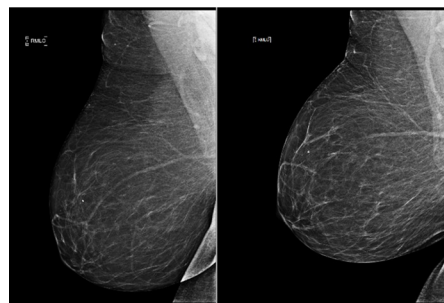
Corrective Actions

- Elevate the breast in the “up and out” maneuver.
- Have patient flatten her other breast and hold it up.
- **Do not let go until compression is complete.**



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Image Evaluation

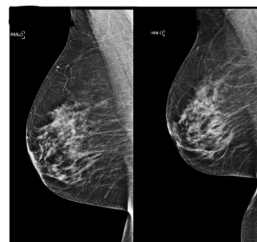
- Increase PNL on the CC
- Visualization of the IMF
- **Image Centering on MLO**



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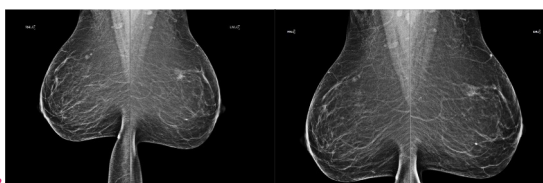
Importance of Proper Image Centering



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Importance of Proper Image Centering



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Image Centering-MLO

- Height of the image receptor
- Compression paddle size



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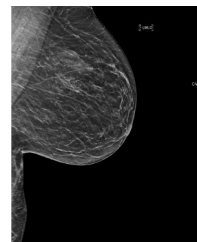
Image Receptor Height

Top of the image receptor should be positioned at the level of the sternoclavicular joint, or halfway between the top of the shoulder and the axillary crease.



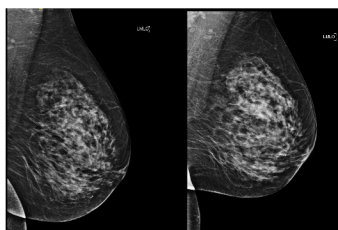
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Height of Image Receptor



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Height of Image Receptor



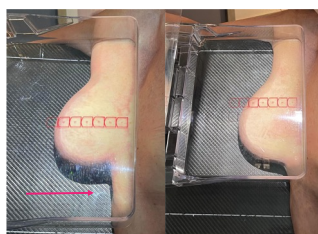
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Compression Paddle Size



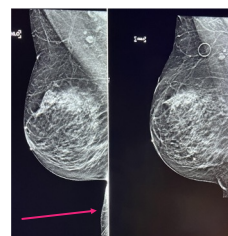
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Compression Paddle Size

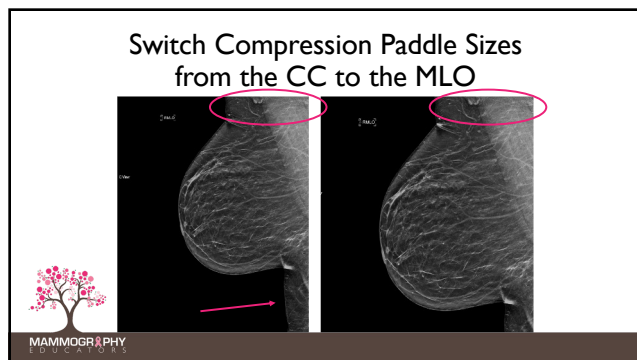


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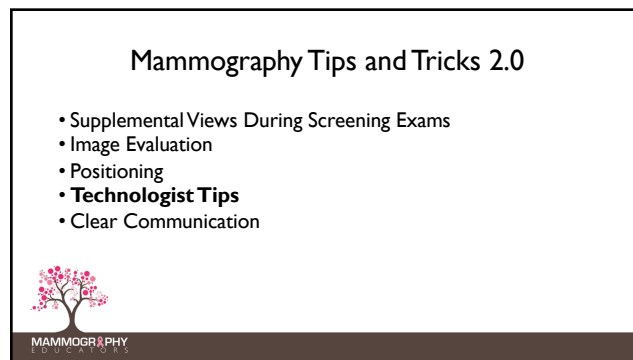
Switch Compression Paddle Sizes from the CC to the MLO



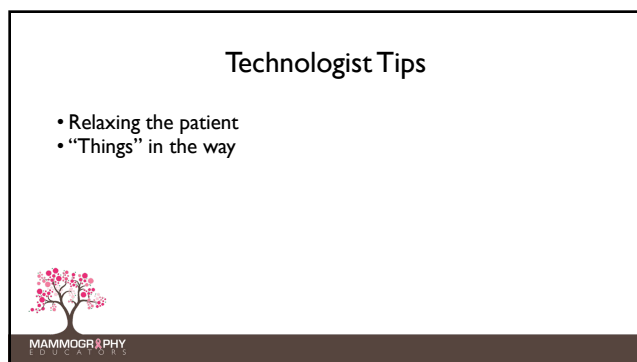
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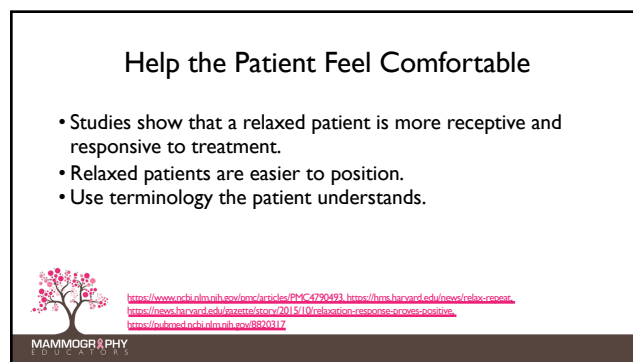
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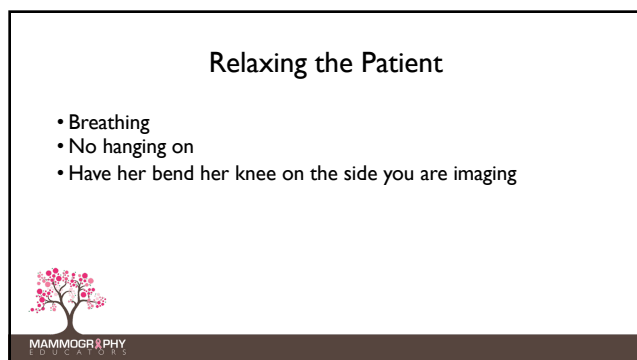
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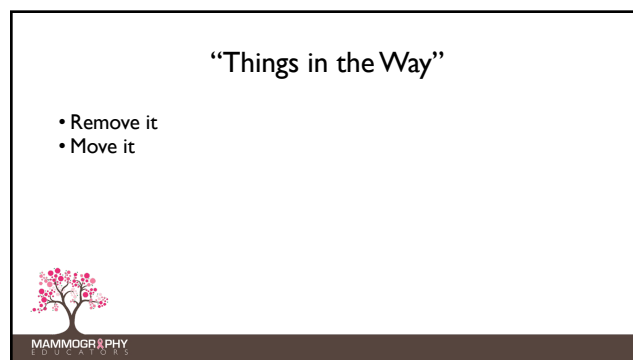
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Gown Trick



When imaging RMLO:

- Untie gown
- Wrap gown around left breast
- Secure under IMF
- Tuck gown into waistband




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Hair Tie Trick

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Hair Tie Trick






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Hair Tie Trick




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Hair Tie Trick

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Communication Tips - Patients

FEAR and ANXIETY cause most people to do the following to gain some 'control' over the situation:

- Be crabby/complain
- Be angry
- Do crazy things
- Say crazy things



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"I hate mammograms."

Suggested response:

"Thank you for coming in anyway."



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"Are you the nurse?"

Suggested response:

"No, I'm an x-ray tech. It's very different training."



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"Is this all you do ALL day long?"

Suggested response:

"Yes it is. I am proud to have this opportunity to provide this service to women."



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Tips for Scripts

- Don't get defensive
- Remember, it's not personal
- Anxiety creates some "interesting" actions/reactions
- Do NOT make fun of your patients or their behavior
- How would you act in this same situation?



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Responding vs. Reacting



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RESPOND, Don't React

- Offer the patients correct information and reassurance.
- Get her in...and out quickly.
- Tell her what you are going to do before you do it.
- Invite her into a partnership.



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Communication Tips - Colleagues

- Complaining about images
- Complaining about patients
- Complaining about co-workers



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Some of the things patients and coworkers do and say can be frustrating!



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Releasing Tension and Refocusing

Inappropriate:

- Complaining
- Using social media as an outlet
- Over-doing
- Negative talk
- Self neglect or punitive behavior



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Releasing Tension and Refocusing

Appropriate:

- Take a walk
- Exercise
- Listen to music
- Treat yourself to some retail therapy
- Treat yourself to some self care



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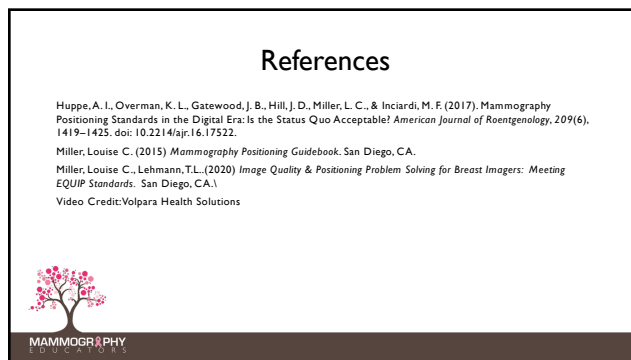


Lead by Example

Will you step up to create solutions or stay on the sidelines of the problem?



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References

Huppe, A. I., Overman, K. L., Gatewood, J. B., Hill, J. D., Miller, L. C., & Inciardi, M. F. (2017). Mammography Positioning Standards in the Digital Era: Is the Status Quo Acceptable? *American Journal of Roentgenology*, 209(6), 1419–1425. doi: 10.2214/ajr.16.17522.

Miller, Louise C. (2015) *Mammography Positioning Guidebook*. San Diego, CA.

Miller, Louise C., Lehmann, T.L. (2020) *Image Quality & Positioning Problem Solving for Breast Imagers: Meeting EQUIP Standards*. San Diego, CA.)

Video Credit: Volpara Health Solutions



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Interact with Breast Imaging Professionals from Around the World

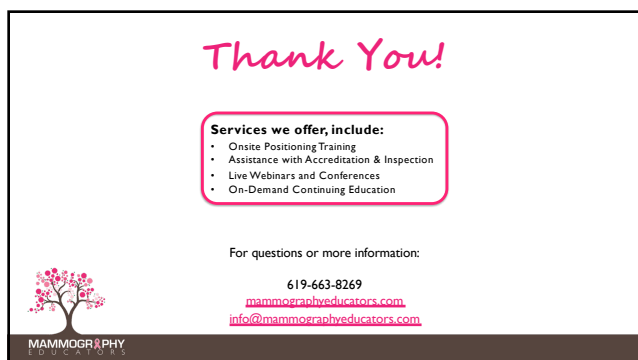
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Thank You!

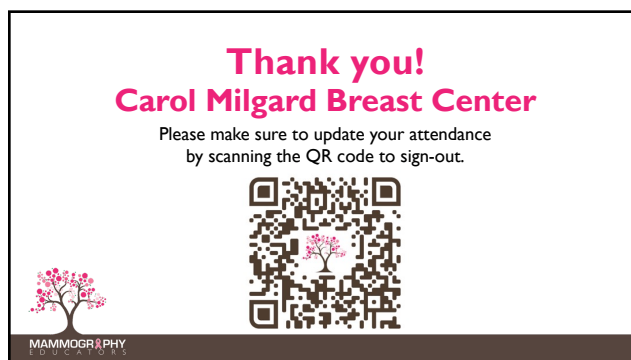
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Carol Milgard Breast Center

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