Hello. My name is Robin Coyne. I’m a family nurse practitioner working in the Cancer Prevention Center at The University of Texas MD Anderson Cancer Center. Today, I will be speaking with you about the evaluation and management of breast masses in the breast cancer survivor.

Upon completion of this lecture, participants will be able to: become proficient in clinical breast examination; review appropriate diagnostic imaging for masses identified on self-breast exam, clinical examination and breast imaging; and recognize the importance of continuity of care when following discordant clinical and imaging findings as well as benign breast abnormalities.

Breast masses can --- may be identified by --- by the patient on self-exam or by chance, or by the clinician during a routing surveillance examination. Breast abnormalities and masses may be identified on the annual mammogram that’s provided during surveillance of breast cancer followup, or as an incidental finding on CT scan, PET scan, nuclear medicine scan used to evaluate unrelated problems.

The American Can --- the American Society of Clinic Oncology Breast Cancer Survivorship Surveillance Guidelines were updated in 2006. Annual surveillance of the breast cancer survivor is a threefold process that includes a detailed medical history update, an assessment for symptoms that could suggest a recurrence, new breast cancer or metastatic disease, a clinical examination that includes a thorough breast exam, and mammogram of the segmental radiated breast and the contralateral breast.

There is evidence that the risk of breast cancer recurrence continues well beyond 15 years from primary cancer diagnosis and treatment. ASCO advises that any healthcare provider providing long term follow-up of breast cancer survivors be highly proficient in cancer surveillance. The clinician should be astute at recognizing normal and abnormal findings within the segmental irradiated breast and at the site of mastectomy with and without reconstruction.

The clinical breast examination should involve inspection and palpation of the breast in both the upright and supine positions. The patient should be asked to disrobe from the waist up, place their hands on their hips, and as the inspector as --- as the examiner inspects the breast for rashes, plaques, erythema, skin dimpling, and nipple retraction, ask the patient to actually flex their arms forward and rotate shoulders side to side, and then place their hands above their head. Once inspection has been complete, move on to palpating the breast by palpating the supraclavicular, infracavicular, and axillary nodal basins bilaterally, assessing for masses. Then begin to palpate the breast tissue beneath the clavicle using the dominant hand and sweeping down while gently lifting the inferior breast with the opposite hand. Sandwich the breast between both hands feeling for dominant masses. Some breast masses or thickenings may only be identified in one position. Finally, ask the patient to lay supine on the exam table with both arms relaxed above their head. Palpate the breast tissue by starting in the axillary tail and moving around the breast with circular motions in a clockwise fashion.
If a mass is identified on clinical examination it is important to describe and recognize the characteristics of the mass. The mass may be smooth or rubbery, may be irregular or more lobulated, may be mobile within the breast tissue or fixed to surrounding breast tissue. Some masses are somewhat elongated. Others are ill-defined and may present themselves only as a thickened area of tissue or density. It’s always important to document or identify association of contour changes such as dimpling, puckering of the breast tissue, or nipple retraction. Skin changes may also be evident. There may be evidence of peau d’orange associated with the mass, which is an orange peel-like edema of the pores of the breast tissue. Ulcerations, erythema, or prominent unilateral veins may be present.

The clinician should provide as much detail as possible when characterizing where the breast mass is and communicating this information to the radiologist in anticipation of additional evaluation by diagnostic breast imaging. So, it's important to describe the location, within what breast do you feel the mass, is it the segmental irradiated breast versus the mastectomy site. And, at the mastectomy site, it could be within the chest wall or the reconstructed breast mound. It is also not uncommon to identify a mass in the contralateral breast and, indeed, there is a risk for breast cancer in the contralateral breast, estimated to be 0 to 0.5 to 1% per year. And commenting on the axillary regions and ensuring that there is no masses there is also important as well.

Annual mammogram of the segmental irradiated breast or the contralateral breast may identify an abnormality suspicious for recurrence or new breast primary. A mass may be clearly evident and seen on two mammogram imaging views by the radiologist, whereas asymmetries, densities, distortions identified by the radiologist within the breast tissue may represent a malignant process obscured by dense breast tissue, surgical changes, and radiation changes. And these findings require further breast imaging.

Evaluation of both the palpable and mammographic abnormality in the breast can include both diagnostic mammogram and ultrasound and sometimes just ultrasound. Breast imaging for the palpable mass in the segmental irradiated breast or contralateral breast should include both diagnostic mammogram and breast ultrasound with possible needle biopsy. If the patient has had a mastectomy, mammographic imaging is not necessary unless the nipple-areolar complex was spared within the reconstructed breast and skin is present. A negative mammogram in the context of a palpable mass does not ensure a negative or benign finding. Ultrasounds should always been be obtained to rule out malignancy that is mammographically occult. Dual imaging with mammogram and ultrasound has been found to be 97 to 99% negative predictive value when assessing breast abnormalities.

Not all palpable breast abnormalities are cancerous, although although your level of suspicion should be higher in the breast cancer survivor. Palpable masses may represent a recurrence or second primary tumor in the contralateral breast and can typically be proven by ultrasound-guided biopsy if not occult by ultrasound. The
differential diagnosis for palpable and mammographic breast masses may include the following: cysts, fibroadenomas, surgical changes or scar tissue, particularly fat necrosis in the breast can present as a hard, immobile mass, particularly within the scar line of the breast. It may resemble a malignancy on clinical exam and should be considered suspicious until proven to be benign on breast imaging and tissue biopsy, if indicated. Abscesses may develop in the breast tissue and may be associated with erythema, warmth to touch, or pain. Breast masses within the radiated breast may be indicative of an angiosarcoma.

Appropriate follow-up of the breast mass is dependent on the diagnosis: Patients with breast cancer recurrence and new primaries should be referred back to their oncologist for additional treatment. Benign breast abnormalities such as cysts, fibroadenomas, or fat necrosis may be followed both clinically and radiologically to ensure stability over a period of time. Clinical breast exam, for example, may be done in three months or six months to ensure stability. Mammogram or ultrasound evaluation in six months may be appropriate as well to ensure the stability of a benign fibroadenoma. If both breast imaging modalities are negative in the presence of a palpable mass or the histologic and imaging are discordant, additional testing should be considered. So you could consider doing a fine needle aspiration by palpation or breast MRI to look further in the breast tissue and ensure that the finding is truly benign. Short-term follow-up with clinical breast examination may be appropriate if the level of suspicion is low and it’s a less worrisome lesion in the breast. It is important to note that approximately 4% of clinical exam with negative imaging are malignant. If in doubt, refer the patient back to their primary oncologist for an evaluation.

So in summary, the risk of breast cancer recurrence in breast cancer survivors continues throughout the lifespan. Clinical breast examination is a key component to breast cancer survivorship follow-up care. And breast masses warrant breast imaging evaluation with attention to clinical, radiological, and histologic correlation and concordance. Thank you for your attention. We appreciate any feedback you may be able to provide.