In screening and diagnostic mammography, optimal technique and appropriate positioning are essential. In addition, skin marking protocols are particularly helpful. At The University of Texas M. D. Anderson Cancer Center (UTMDACC), we use five different skin markers in our daily digital and screen-film mammography practice. While skin markers have been shown to provide added value in screen-film mammography, we believe that skin marking protocols are efficacious in digital mammography as well.

At UTMDACC, our skin marking protocols are identical for screen-film and digital mammograms. In our practice, we believe that skin marking protocols are an integral part of providing high quality mammographic services to our patients.

Moles and surgical scars are routinely marked by our technologists on screen-film and digital images, as these skin lesions may not be readily apparent to the interpreting mammographer. Nipple markers are useful in digital and screen-film mammography. The placement of nipple markers facilitates accurate measurement of the nipple-to-lesion distance. Nipple markers are particularly helpful in cases in which the nipple is not in profile, in cases with subareolar masses, and in cases with suboptimal exposures. Regarding marker placement prior to stereotactic core biopsy, all of these marking procedures are performed with digital imaging guidance at UTMDACC, as digital systems allow for visualization of the marker seconds after an exposure is obtained. At UTMDACC, all palpable areas are marked. This allows the radiologist to focus on the area of interest, and tangential views are usually obtained in the region of the marker.

At UTMDACC, a marker is placed on the nipple on every mammographic image. The nipple marker (Figures 1 and 3) aids the mammographer in determining if the image was taken with the nipple in profile. If the nipple is not in profile, the nipple marker will project over the breast parenchyma. If the nipple is in profile, the marker (Figure 2) will be seen just anterior to the front of the breast. At UTMDACC, all findings on breast imaging studies (mammography, sonography, and magnetic resonance imaging) are reported with the distance from the nipple and the o’clock position. This reporting system helps to establish concordance between findings identified with different modalities.

Nipple markers continue to provide benefit on digital mammographic studies, as the radiologists can quickly and accurately determine the nipple-to-lesion distance. In digital mammography, placement of nipple markers eliminates the need to adjust the window and the level settings. Also, placement of nipple markers facilitates measurement of the posterior nipple line and aids technologists in measuring the distance from the nipple for additional views, such as spot compression and magnification views.

At UTMDACC, all surgical scars are marked with linear scar markers (Figures 1 and 3). Marking the scar aids the mammographer and the technologist in focusing on the surgical site. Often, magnification images are obtained in the region of the surgical site. The scar marker helps the radiologist to identify the surgical site within the breast. Placement of scar markers facilitates the establishment of concordance between the surgical history and the mammographic findings. All surgical scars are marked in our practice, regardless of the imaging system. Marking surgical scars is important, as it is quite common for the skin scar to be distant from the scar within the breast.
Prior to stereotactic core needle biopsy of faint calcifications, a surface marker may be placed over the area in question to facilitate targeting. At UTMDACC, patients with faint calcifications who are scheduled for stereotactic core biopsy are taken to a digital mammography room. An image of the calcifications scheduled for biopsy is then obtained with a fenestrated compression device. After the calcifications are identified, a radiopaque marker is placed on the skin surface, over the calcifications. The patient is then taken to the stereotactic biopsy room. A scout image is then obtained, targeting the radiopaque marker. The associated targeted calcifications are then usually identified with little difficulty. Thereafter, the surface marker is removed, and the stereotactic core biopsy is performed. While marker placement prior to stereotactic core biopsy can be performed with screen-film mammography, this procedure should be performed with a digital system, if available. Digital mammography provides an image of the marker seconds after the exposure, resulting in decreased compression time and decreased procedure time compared to screen-film mammography.