

# **What Happens when a Consistent Versus Sporadic Use of a Five Shape Breast Skin Marking System Is Used in Digital Breast Tomosynthesis (DBT)?** *A Pictorial Review about the Importance of Using a Consistent Five-Shape Skin Marking System and its Impact on the Radiologist's Reading Time.*

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**PURPOSE:** Understanding the importance of consistent versus sporadic use of the five shape skin marking system in DBT to reduce medical error, liability, and radiologist reading time.

**METHOD AND MATERIALS:** DBT patients were marked with sporadic use of the five shape skin marking protocol at the Department of Diagnostic Radiology, University of Connecticut. In 2014, one hundred and two (102) DBT patients were tracked with sporadic use of a five shape skin marking communication system. In addition, one hundred and two (102) DBT patients were tracked with consistent use of the five shape skin marking system. Low density skin markers in five shapes were used from Beekley Medical. Materials included: the pellet for nipples, line for scars, circle for moles, triangle for palpable masses, and square for non-palpable areas of pain or concern. Radiologist reading time was also tracked for the two DBT patient groups. In addition, DBT patient cases were gathered and reviewed with regards to skin marking and patient outcomes.

**RESULTS:** An average of 7,000 DBT exams are read by radiologists at the University of Connecticut Medical Center each year. The average radiologist read time tracking of 102 DBT patients with sporadic use of the five shapes for skin marking was 4:11 minutes per patient. The average radiologist read time tracking of 102 DBT patients with a consistent five shape skin marking protocol was 2:37 minutes per patient.

Eight pictorial DBT patient cases were analyzed with regards to the use of skin markers in DBT. The pictorial case-studies represent inconsistent, sporadic use of the five shape skin marking system in DBT and reveals opportunity to reduce:

- questions
- medical error and liability consequences
- repeat imaging and radiation dose
- patient anxiety

**CONCLUSION:** Marking all areas on the breast with a consistent five shape skin marking protocol in DBT reduces the potential for medical error and liability consequences associated with false negatives and false positives, additional image views adding to increase dose and patient anxiety, and questions to and from the radiologist with an average reduction in radiologist DBT reading time of 1:34 minutes per patient.