



Breast Cancer Screening and Diagnostic Advancements

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The best tool to detect breast cancer (BC) is 'screening'. Earlier screening improves prognosis and better treatment outcomes. Screening is basically looking for different signs before the appearance of actual symptoms. The process of screening specifically used for BC is known as mammography.

Mammography is an explicit kind of imaging system that uses X-Rays (low dose) to ascertain cancer in breasts. This diagnostic procedure is in practice since the past 30 years but in the past 15 years, there is an improved set of techniques being introduced resulting in better results. Recently, three major diagnostic procedures for breast cancer which are in vogue include digital mammography, computer-aided testing and tomosynthesis. Out of these 3 diagnostic tools, tomosynthesis, furthermore branded as three-dimensional (3-D) mammography and digital tomosynthesis, is the supreme and innovative system of breast imaging where numerous pictures of the breast from diverse angles are taken and remodeled ("synthesized") resulting in formation of a three-dimensional group of images. That is why, 3-D imaging technique is alike computed tomography imaging system in which a sequences of thin "slices" are gathered to formulate a 3-D reformation of the body.

Even though the strength of radiation for few tomosynthesis systems is higher to some extent as compared to power of the dosage used in typical mammography, but as long as it is in the predefined radiation limit approved by FDA it's not harmful. Some of the systems have doses comparable to conventional mammography. Some previous studies on large populations have proved that breast screening with tomosynthesis have resulted in enhanced the rate of detection of breast cancer detection rates and it has also decreased the chances of recalls, especially at occasions where females are called back for screening for added testing because of a possibly uncharacteristic finding.

Tomosynthesis has an edge on other diagnostic procedures as it may help in prior recognition of cancerous lesions that may be not be revealed on a conventional mammogram, it also eradicates the need for small number of preventable biopsies or supplementary testing and increases the probability of detection of several breast tumors. It also provides stronger imagining of irregularities within condensed breast tissue and greater precision in pinpointing the location, size and shape of breast anomalies.

Women should at least get a standard mammogram once a year beginning at age 40. The major risk factors for BC development are old age, inactivity, reproductive history, genetic mutations, family history of ovarian or BC, being overweight or obese after menopause, history of administration of hormones. Also, if someone, have had radiation treatment to the chest in the past, it's highly recommended that such women should have annual mammograms at a younger age (often beginning around age 30).