



**Public Health +** comes to you via the McMaster Health Knowledge Refinery. Every article from over 120 medical and allied health academic journals is critically appraised to identify those that are methodologically sound. Articles that pass this process are rated (maximum 7) by clinicians for relevance and newsworthiness, and are then sent to this website. The articles are updated weekly and a searchable archive is kept on this website.



For more information on the process or to sign-up as a rater, go to [McMaster PLUS](#).

## Article Details

**Title:** Supplemental Screening for Breast Cancer in Women With Dense Breasts: A Systematic Review for the U.S. Preventive Services Task Force.

**Authors:**

**Source:** Ann Intern Med. 2016 Jan 12. doi: 10.7326/M15-1789.

**Relevance Rating:** 6.00

**Newsworthiness Rating:** 5.00

**Abstract:**

Background: Screening mammography has lower sensitivity and specificity in women with dense breasts, who experience higher breast cancer risk. Purpose: To perform a systematic review of reproducibility of Breast Imaging Reporting and Data System (BI-RADS) density categorization and test performance and clinical outcomes of supplemental screening with breast ultrasonography, magnetic resonance imaging (MRI), and digital breast tomosynthesis (DBT) in women with dense breasts and negative mammography results. Data Sources: MEDLINE, PubMed, EMBASE, and Cochrane database from January 2000 to July 2015. Study Selection: Studies reporting BI-RADS density reproducibility or supplemental screening results for women with dense breasts. Data Extraction: Quality assessment and abstraction of 24 studies from 7 countries; 6 studies were good-quality. Data Synthesis: Three good-quality studies reported reproducibility of BI-RADS density; 13% to 19% of women were recategorized between ``dense`` and ``nondense`` at subsequent screening. Two good-quality studies reported that sensitivity of ultrasonography for women with negative mammography results ranged from 80% to 83%; specificity, from 86% to 94%; and positive predictive value (PPV), from 3% to 8%. The sensitivity of MRI ranged from 75% to 100%; specificity, from 78% to 94%; and PPV, from 3% to 33% (3 studies). Rates of additional cancer detection with ultrasonography were 4.4 per 1000 examinations (89% to 93% invasive); recall rates were 14%. Use of MRI detected 3.5 to 28.6 additional cancer cases per 1000 examinations (34% to 86% invasive); recall rates were 12% to 24%. Rates of cancer detection with DBT increased by 1.4 to 2.5 per 1000 examinations compared with mammography alone (3 studies). Recall rates ranged from 7% to 11%, compared with 7% to 17% with mammography alone. No studies examined breast cancer outcomes. Limitations: Good-quality evidence was sparse. Studies were small and CIs were wide. Definitions of recall were absent or inconsistent. Conclusion: Density ratings may be recategorized on serial screening mammography. Supplemental screening of women with dense breasts finds additional breast cancer but increases false-positive results. Use of DBT may reduce recall rates. Effects of supplemental screening on breast cancer outcomes remain unclear. Primary Funding Source: Agency for Healthcare Research and Quality.

The full text may be available from [PubMed](#).