



Canadian Association of Radiologists
L'Association canadienne des radiologistes



Canadian Society of Breast Imaging
Société canadienne de l'imagerie mammaire

CAR/CSBI Position Statement on Mammographic Breast Density and Supplemental Screening

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Recently, there has been increased media coverage on mammographic breast density, as well as North American legislative change. Most US states have adopted breast density legislation and Canadian provinces are starting to discuss similar legislation. Additionally, Health Canada recently approved an automated breast ultrasound system. For these reasons, the Canadian Association of Radiologists (CAR) and the Canadian Society of Breast Imaging (CSBI) have provided the following position statement on Breast Density and Supplemental Screening.

Breast density is determined by mammography alone and cannot be detected through physical examination. Over 40% of women have dense breast tissue,^{1,2} defined as heterogeneously dense (ACR C) or extremely dense (ACR D).³ Dense breast tissue is an independent risk factor for the development of breast cancer and decreases the likelihood of breast cancer being detected on screening mammography, potentially leading to delayed diagnosis.⁴⁻⁷

Breast density should be reported by the radiologist on all screening and diagnostic mammograms.³ This may be included within the radiology report, results letter, or both.

The current CAR Breast Imaging and Intervention Guideline indicates that breast ultrasound is not appropriate for screening the general population.⁸ This does not preclude supplemental screening breast ultrasound for the subpopulation of patients with mammographically dense tissue (ACR C and D). The CAR and CSBI acknowledge that there are challenges with providing supplemental screening for this subpopulation. Handheld ultrasound is operator dependent and time consuming, while access to experienced breast sonographers and radiologists, as well as funding, may remain challenges for some time to come.

Supplemental screening breast ultrasound is not recommended for women at high risk for breast cancer, defined as a lifetime risk of 20-25% or greater. Breast MRI screening is recommended for these high-risk women, regardless of breast tissue density. In average-risk women, supplemental screening breast ultrasound has been shown to increase detection of small node negative cancers as well as decrease the interval cancer rate.⁹⁻¹¹ However, discussion with the patient is encouraged, particularly regarding the increased probability that she may experience a false positive recall, and that she could require a needle biopsy for findings that may not turn out to be cancer.⁹⁻¹¹ When considering supplemental screening breast ultrasound, breast density should be placed in context with other risk factors and risk reduction strategies.



Ultrasound should not be used as a primary screening modality. Mammography remains the primary modality for screening women of all breast densities with mortality benefits of 40-60% among those who participate regularly, as demonstrated in recently published, long-running studies.^{12, 13} Screening mammography should be optimized with high-quality digital mammography, as this has been shown to increase sensitivity in women with mammographically dense tissue.¹⁴ Annual mammography can be considered for all women with extremely dense breast tissue (ACR D) who participate in screening as it may decrease the number of interval cancers.¹

KEY POINTS

1. Dense breast tissue is an independent risk factor for the development of breast cancer and decreases the likelihood of breast cancer being detected on screening mammography.
2. Breast density should be reported by the radiologist on all screening and diagnostic mammograms.
3. Supplemental screening breast ultrasound may be considered for patients with dense breast tissue (ACR C & D density categories).
4. When considering supplemental screening breast ultrasound, breast density should be placed in context with other risk factors and risk reduction strategies.
5. Mammography remains the primary modality for screening women of all breast densities.
6. Supplemental screening breast ultrasound should not replace breast MRI screening for women who have a high lifetime risk of breast cancer.
7. Annual mammography can be considered for all women with dense breast tissue who participate in screening.

REFERENCES

1. Coldman A. Report on Breast Density. Vancouver, BC: BC Cancer 2018.
2. Lee CI, Bassett LW and Lehman CD. Breast density legislation and opportunities for patient-centered outcomes research. *Radiology*. 2012; 264: 632-6.
3. Sickles E, D'Orsi CJ, Bassett LW, et al. ACR BI-RADS® Mammography. *ACR BI-RADS® Atlas, Breast Imaging Reporting and Data System*. Reston, VA: American College of Radiology, 2013.
4. Wolfe JN. Breast patterns as an index of risk for developing breast cancer. *AJR Am J Roentgenol*. 1976; 126: 1130-7.



5. Boyd NF, Guo H, Martin LJ, et al. Mammographic density and the risk and detection of breast cancer. *N Engl J Med.* 2007; 356: 227-36.
6. Boyd NF, Martin LJ, Yaffe MJ and Minkin S. Mammographic density and breast cancer risk: current understanding and future prospects. *Breast Cancer Res.* 2011; 13: 223.
7. Chiu SY, Duffy S, Yen AM, Tabar L, Smith RA and Chen HH. Effect of baseline breast density on breast cancer incidence, stage, mortality, and screening parameters: 25-year follow-up of a Swedish mammographic screening. *Cancer Epidemiol Biomarkers Prev.* 2010; 19: 1219-28.
8. Appavoo S, Aldis A, Causer P, et al. CAR Practice Standards and Technical Guidelines for Breast Imaging and Intervention. Ottawa, Ontario: Canadian Association of Radiologists 2016.
9. Corsetti V, Houssami N, Ghirardi M, et al. Evidence of the effect of adjunct ultrasound screening in women with mammography-negative dense breasts: interval breast cancers at 1-year follow-up. *Eur J Cancer.* 2011; 47: 1021-6.
10. Brem RF, Tabar L, Duffy SW, et al. Assessing improvement in detection of breast cancer with three-dimensional automated breast US in women with dense breast tissue: the Somolnsight Study. *Radiology.* 2015; 274: 663-73.
11. Ohuchi N, Suzuki A, Sobue T, et al. Sensitivity and specificity of mammography and adjunctive ultrasonography to screen for breast cancer in the Japan Strategic Anti-cancer Randomized Trial (J-START): a randomised controlled trial. *Lancet.* 2016; 387: 341-8.
12. Coldman A, Phillips N, Wilson C, et al. Pan-Canadian study of mammography screening and mortality from breast cancer. *J Natl Cancer Inst.* 2014; 106.
13. Tabar L, Dean PB, Chen TH, et al. The incidence of fatal breast cancer measures the increased effectiveness of therapy in women participating in mammography screening. *Cancer.* 2019; 125: 515-23.
14. Pisano ED, Hendrick RE, Yaffe MJ, et al. Diagnostic accuracy of digital versus film mammography: exploratory analysis of selected population subgroups in DMIST. *Radiology.* 2008; 246: 376-83.