Supplementary Online Content

Kerlikowske K, Miglioretti D, Vachon CM. Discussions of dense breasts, breast cancer risk and screening choices in 2019. *JAMA*. doi:10.1001/jama.2019.6247

This supplementary material has been provided by the authors to give readers additional information about their work.

eBox. Recommendations for Supplemental Imaging for Women With Dense Breasts by Various Organizations

US Preventive Services Task Force (2016)

Current evidence is insufficient to assess the balance of benefits and harms of adjunctive screening for breast cancer using breast ultrasonography, magnetic resonance (MR) imaging, digital breast tomosynthesis (DBT), or other methods in women identified to have dense breasts based on otherwise negative results of a screening mammogram

American Cancer Society (2015)

There is not enough evidence to make a recommendation for or against yearly MR imaging screening. Women should talk to their clinician about whether they should undergo other supplemental breast imaging tests

American College of Radiology (2018)

Supplemental ultrasonography for women with dense breasts as the only risk factor may be useful for incremental cancer detection

Annual breast MR imaging for women with dense breasts and a personal history of breast cancer

American College of Obstetricians and Gynecologists (2019)

Routine use of alternative or adjunctive tests to screening mammography in women with dense breasts who are asymptomatic and have no additional risk factors is not recommended

American Academy of Family Physicians (2016)

Current evidence is insufficient to assess the balance of benefits and harms of adjunctive screening for breast cancer using breast ultrasonography, MR imaging, DBT, or other methods

eTable. Supplemental Imaging Tests Examined in Women With Dense Breasts Compared to Digital Mammography Alone

Test	Incremental Breast Cancer Detection per 1000 Exams[a]	Biopsy Rate per 1000 Exams[a]	Radiation Dose (location)
Digital mammography[b]	NA	22	0.5 mSv (breast)
Ultrasound[c,d,e]	2 to 4	50 to 57	None

Digital breast tomosynthesis[b,c]	1 to 2	28	1.0 mSv (breast)
Breast MRI[c,f]	10 to 16	44g	None
Molecular breast imaging[c,h,i,j]	8 to 9	32 to 37	2.4 mSv (whole body)

[a]Range reflects reported values from referenced articles.

[b]Conant EF, Barlow WE, Herschorn SD, Weaver DL, Beaber EF, Tosteson ANA, Haas JS, Lowry KP, Stout NK, Trentham-Dietz A, diFlorio-Alexander RM, Li CI, Schnall MD, Onega T, Sprague BL; Population-based Research Optimizing Screening Through Personalized Regimen (PROSPR) Consortium. Association of digital breast tomosynthesis vs digital mammography with cancer detection and recall rates by age and breast density. *JAMA Oncol*. 2019 Feb 28. doi: 10.1001/jamaoncol.2018.7078.

[c]Berg WA. Nuclear breast imaging: Clinical results and future directions. *J Nucl Med.* 2016;57:46S-52S.

[d]Rebolj M, Assi V, Brentnall A, Parmar D, Duffy SW. Addition of ultrasound to mammography in the case of dense breast tissue: systematic review and meta-analysis. *Br J Cancer*. 2018 Jun;118(12):1559-1570. doi: 10.1038/s41416-018-0080-3.

[e]Lee JM, Arao RF, Sprague BL, Kerlikowske K, Lehman CD, Smith RA, Henderson LM, Rauscher GH, Miglioretti DL. Performance of screening ultrasonography as an adjunct to screening mammography in women across the spectrum of breast cancer risk. *JAMA Intern Med*. 2019 Mar 18. doi: 10.1001/jamainternmed.2018.8372.

[f]Kuhl CK, Strobel K, Bieling H, Leutner C, Schild HH, Schrading S. Supplemental breast MR imaging screening of women with average risk of breast cancer. *Radiology*. 2017;283(2):361-370.

[g]Any breast density.

[h]Hruska CB. Molecular breast imaging for screening in dense breasts: state of the art and future directions. *Am J Roentgenol*. 2017;208: 275-283.

[i]Hruska CB, Conners AL, Jones KN, O'Connor MK, Moriarty JP, Boughey JC, Rhodes DJ, Hruska CB, Conners AL, Tortorelli CL, Maxwell RW, Jones KN, Toledano AY, O'Connor MK. Molecular breast imaging at reduced radiation dose for supplemental screening in mammographically dense breasts. *AJR.* 2015; 204:241–251.

[j]Shermis RB, Wilson KD, Doyle MT, Martin TS, Merryman D, Kudrolli H, Brenner RJ. Supplemental breast cancer screening with molecular breast imaging for women with dense breast tissue. *AJR.* 2016; 207:450–457.