Breast Cancer Screening For Elevated-Risk Women

American College of Radiology™

In the United States, one in eight women will develop breast cancer during their lifetime, equating to an approximately 13% average lifetime risk. For this average-risk population, the American College of Radiology® and Society of Breast Imaging recommend annual screening mammography starting at age 40.

75%

More than 75% of women who develop breast cancer have no family history of breast cancer. Numerous medical, hereditary and lifestyle factors may increase a woman's risk of developing breast cancer — including:

- Older age.
- Family history of breast and/or ovarian cancer, especially in first- or second-degree relatives.
- Personal history of breast cancer.
- Older age at menopause.
- Younger age at menarche.
- Nulliparity.
- Obesity.
- Personal or family history of certain genetic mutations, including BRCA[1] and BRCA[2].
- History of chest radiation therapy under age 30, for example lymphoma treatment.
- Dense breast tissue on mammography.
- History of certain "high-risk" lesions on breast biopsy, such as atypical ductal hyperplasia, atypical lobular hyperplasia, or LCIS.

Women with a cumulative lifetime breast risk ≥ 20 percent are considered high-risk. Compared to average-risk women, elevated-risk women are more likely to be diagnosed with larger breast cancers, node-positive cancers and interval cancers. All of these cancers are associated with worse prognoses[2].

High-risk women may benefit from starting breast cancer screening at a younger age and supplementing annual screening mammography with yearly breast MRI. Breast MRI significantly outperforms mammography in breast cancer detection for high-risk women[3].

As a result, the American College of Radiology and Society of Breast Imaging recommend that all women discuss their risk factors with their healthcare providers beginning no later than at age 25. Such assessment is particularly important for Black, Jewish and other minority women, who may be more likely to have genetic mutations associated with breast cancer and/or develop aggressive breast cancers. Providers may utilize a breast cancer risk assessment mathematical model (many of which are freely available online) to calculate their patients' breast cancer risk level. To determine the need for supplemental screening breast MRI, the American Cancer Society recommends a risk model that includes family history assessment such as the Claus model, Tyrer-Cuzick model, BRCAPRO model, and the Breast and Ovarian Analysis of Disease Incidence and Carrier Estimation Algorithm (BOADICEA) model[4].

American College of Radiology Guidelines for Screening Women at Elevated Breast Cancer Risk

Higher-risk women need supplemental and earlier screening

Risk	Mammography/ Tomosynthesis	MRI*
Known genetic mutation or lifetime risk ≥ 20%	Annually starting at age 30	Annually starting at age 25–30
Breast cancer history and dense breasts at any age or breast cancer diagnosed < age 50	Annually starting at time of diagnosis	Annually starting at time of diagnosis
History of chest radiation therapy before age 30	Annually starting at age 25 or 8 years after therapy (whichever is later)	Annually starting at age 25–30
History of ADH, ALH, LCIS or personal breast cancer history other than above	Annually starting at time of diagnosis	Consider annually starting at time of diagnosis

*Ultrasound may be considered if women cannot undergo MRI.
Monticciolo DL et. al, J Am Coll Radiol 2018;15:408-414

[1]https://www.cancer.org/cancer/breast-cancer/about/how-common-is-breast-cancer.html
[2]https://pubmed.ncbi.nlm.nih.gov/29371086/
[3]https://pubmed.ncbi.nlm.nih.gov/29371086/
[4]Smith R, Cokkinides V, Brawley O. Cancer Screening in the United States, 2012. CA Cancer J Clin 2012; 62:129-142.

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