

Risk Based Breast Screening Recommendations

- Ideally, initial IBIS risk assessment should be offered after the initial screening mammogram, if not already performed, and then:
 - Every 5-6 years until age 65
 - When a woman has a new family member diagnosed with breast cancer
 - Or when a woman has a new personal diagnosis of atypia (e.g. LCIS, ADH, ALH).
- Tomosynthesis is recommended as baseline mammogram screening for all women. Subsequent mammogram recommendations will be made on the basis of breast density.
- While mammography continues to represent the main modality for breast screening, supplemental screening with MRI is recommended for some women. MRI has been shown to increase cancer detection although additional research is needed to demonstrate a decrease in breast cancer mortality.
- Contrast enhanced mammography can be considered as an alternative to MRI screening in population risk women or for women in higher risk categories, although at this stage availability is limited.
- Screening breast ultrasound is now not generally recommended, as there is insufficient evidence of significant benefit, but it can be considered in BIRADS C and D density women in addition to 2D mammograms if tomosynthesis is not available.
- Women with the following conditions do not require IBIS risk assessment and should be managed according to the appropriate category in the protocol below.
 - BRCA 1, BRCA 2, PALB2, PTEN (Cowden), STK11 (Peutz-Jeghers), CDH1 (E-Cadherin), ATM
 - TP53 (Li-Fraumeni) syndrome or A-T homozygotes
 - Previous chest radiotherapy
 - Previous breast cancer
- Women with a personal history of breast malignancy (in-situ or invasive) should be managed according to the previous breast cancer protocols unless they have a specific genetic mutation requiring more intensive screening, in which case they should be managed according to that protocol.
- Women who are pregnant or lactating can continue mammographic surveillance according to their Risk based recommendation. Lactating women are recommended to express prior to their mammogram for comfort and to reduce density.

- Women having mammograms and breast MRI for screening should have the timing of these examinations offset. Women having yearly mammograms and MRI should have these examinations offset at 6 monthly intervals and women having mammograms every 2 years should have MRI in the year they do not have mammogram screening.
- Women can self-refer for asymptomatic screening mammograms, although they must specify a registered medical doctor for the results to be sent to. In practice, this is most often their GP.
- Screening breast MRI or contrast enhanced mammography requires a referral from a specialist or GP.

Risk Group	Age Group	Screening/Surveillance
Population risk ($\leq 17\%$ lifetime risk)		
	<40 years	• No screening
	40-49 years	• Annual mammogram ○ First mammogram tomosynthesis for all, risk assessment recommended at same time to guide future screening strategy ○ Thereafter: ▪ BIRADS density A, B: Annual 2D Mammogram ▪ BIRADS density C and D: Annual Tomosynthesis • BIRADS C and D: Breast MRI every 2-4 years Note: Breast MRI in density C and D women should be performed at least every 4th year, and ideally every second year.
	50-69 years	• Mammogram every second year ○ BIRADS density A, B: 2D Mammogram ○ BIRADS density C, D: Tomosynthesis • Note some women may wish to continue with annual mammograms for personal choice • BIRADS density C and D: Breast MRI every 2-4 years Note: Breast MRI in density C and D women should be performed at least every 4th year, and ideally every second year.

	>70 years	- Mammogram every second year for as long as woman wishes to continue screening - BIRADS density A, B: 2D Mammogram - BIRADS density C, D: Tomosynthesis
Moderately increased risk (>17-<30% lifetime risk) For confirmed breast cancer genes: CHEK2, BARD1, NF1, RAD51C, RAD51D assess risk according to IBIS risk assessment and manage either as moderate risk or calculated risk, whichever is higher.		
	< 40 years	- Annual breast MRI from age 30 in women with $\geq 20\%$ lifetime risk - Personal history of LCIS/atypia: - Annual breast MRI from diagnosis - Annual mammogram - BIRADS density A, B: Annual 2D Mammogram if >30 years - BIRADS density C and D: Annual Tomosynthesis if >30 years
	40– 49 years	- Annual mammogram - BIRADS density A, B: Annual 2D Mammogram - BIRADS density C and D: Annual Tomosynthesis - Annual breast MRI in women with $\geq 20\%$ lifetime risk or BIRADS density C or D
	50–70 years	- Annual mammogram - BIRADS density A, B: 2D Mammogram - BIRADS density C, D: Tomosynthesis - Annual breast MRI in women with $\geq 20\%$ lifetime risk - Consider breast MRI every second year if <20% lifetime risk and BIRADS C or D density
	>70years	- Mammogram every second year for as long as woman wishes to continue screening - BIRADS density A, B: 2D Mammogram - BIRADS density C, D: Tomosynthesis
High risk ($\geq 30\%$ lifetime risk)		
	< 40 years	Annual breast MRI from age 25

		- Personal history of LCIS - Annual breast MRI from diagnosis - Annual mammogram - BIRADS density A, B: Annual 2D Mammogram if >30 years - BIRADS density C and D: Annual Tomosynthesis if >30 years
	40-70 years	- Annual mammogram - BIRADS density A, B: 2D Mammogram - BIRADS density C, D: Tomosynthesis - Annual breast MRI
	>70 years	- Mammogram every second year for as long as woman wishes to continue - BIRADS density A, B: 2D Mammogram - BIRADS density C, D: Tomosynthesis - Consider breast MRI every second year
Confirmed Breast Cancer Gene carriers: BRCA 1, BRCA 2, PALB2, PTEN, STK11(Peutz-Jeghers), CDH1 (E-Cadherin), ATM,		
	<25 years	No screening (unless relative diagnosed with breast cancer aged <25)
	25-39 years	Annual breast MRI
	40-70 years	- Annual breast MRI - Annual mammogram - BIRADS density A, B: 2D Mammogram - BIRADS density C, D: Tomosynthesis
	>70 years	- Mammogram every second year for as long as woman wishes to continue screening - BIRADS density A, B: 2D Mammogram - BIRADS density C, D: Tomosynthesis - Consider breast MRI every second year
Women with TP53 (Li-Fraumeni) syndrome or A-T homozygotes		
	20-70 years	- Annual breast MRI - NO mammograms
	>70 years	MRI every 2 years if woman wishes to continue screening

Previous breast malignancy (in situ or invasive) diagnosed at <50 years or age		
	<40 years	• Annual breast MRI
	40-49 years	• Annual mammogram ○ BIRADS density A, B: 2D Mammogram ○ BIRADS density C, D: Tomosynthesis • Annual breast MRI
	50- 70 years	• Annual mammogram ○ BIRADS density A, B: 2D Mammogram ○ BIRADS density C, D: Tomosynthesis • BIRADS density C and D: Annual Breast MRI
	>70 years	• Annual mammogram for as long as woman wants to continue screening ○ BIRADS density A, B: 2D Mammogram - BIRADS density C, D: Tomosynthesis
Previous breast malignancy (in situ or invasive) diagnosed at 50 years or older		
	50- 70 years	• Annual mammogram ○ BIRADS density A, B: 2D Mammogram ○ BIRADS density C, D: Tomosynthesis • BIRADS density C and D: Breast MRI every second year Note: Breast MRI in density C and D women should be performed at least every 4th year, and ideally every second year.
	>70 years	• Annual mammogram for as long as woman wants to continue screening ○ BIRADS density A, B: 2D Mammogram - BIRADS density C, D: Tomosynthesis
Women with previous diagnosis of Atypia (e.g. LCIS, ADH, ALH)		
	All ages	Complete IBIS risk assessment and follow protocol depending on level of risk
Previous Radiotherapy to breast tissue		
Radiotherapy between ages 0-9 years: No increased screening		
Radiotherapy between ages 10-19: Surveillance starts at age 25 or 8 years after first irradiation, whichever is earlier		
Radiotherapy between ages 20-35: Surveillance starts at 30 or 8 years after first irradiation, whichever is later		

	25-39 years	• Annual breast MRI
	40-49 years	• Annual breast MRI • Annual mammogram ○ BIRADS density A, B: 2D Mammogram ○ BIRADS density C, D: Tomosynthesis
	50-70	• Annual mammogram ○ BIRADS density A, B: 2D Mammogram ○ BIRADS density C, D: Tomosynthesis • Annual breast MRI if BIRADS C or D breast density
	>70 years	• Mammogram every second year as long as woman wishes to continue screening ○ BIRADS density A, B: 2D Mammogram ○ BIRADS density C, D: Tomosynthesis

<https://www.eviq.org.au/cancer-genetics/adult/risk-management>

<https://www.gov.uk/government/publications/breast-screening-higher-risk-women-surveillance-protocols/protocols-for-surveillance-of-women-at-higher-risk-of-developing-breast-cancer>

<https://www.gov.uk/government/publications/breast-screening-higher-risk-women-surveillance-protocols/tests-and-frequency-of-testing-for-women-at-very-high-risk--2>

ACR Appropriateness Criteria: <https://acsearch.acr.org/docs/3102382/Narrative/>

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