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(educational)

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Breast cancer screening with AI: preparing radiologists

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Learning Objectives

- To develop practical experience in interpreting mammography artificial intelligence (AI) outputs for detection.
- To understand how AI results can influence radiologists' behaviour in breast cancer screening.
- To appreciate how different AI implementation strategies influence the radiologist's role in screening practice.

Background/Purpose

AI demonstrates strong performance in mammographic breast cancer detection.[1] However, successful implementation depends not only on algorithm performance but also on **effective radiologist-AI interaction**. A growing body of prospective studies supports its adoption in breast cancer screening.[2–6] Nevertheless, educational resources preparing radiologists for real-world AI collaboration remain limited. This abstract presents an educational framework developed at the Dutch Expert Centre for Screening (LRCB), based on a masterclass designed to provide screening radiologists with experience of working with AI in breast cancer screening.

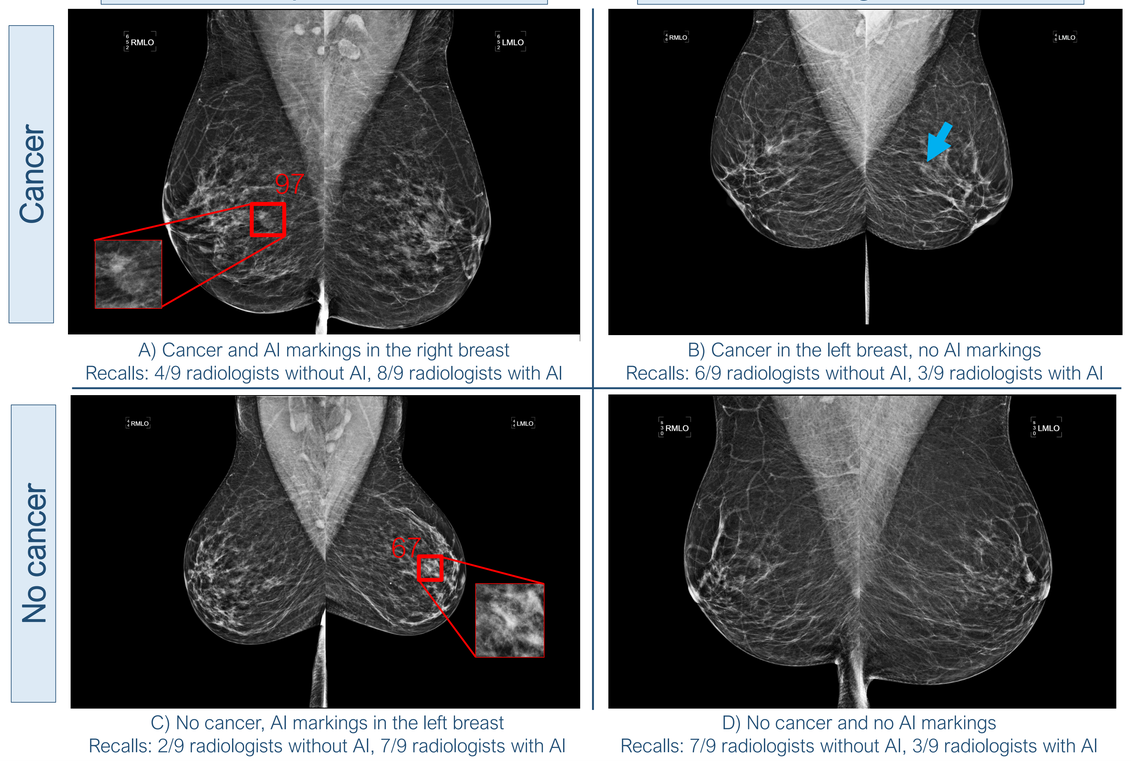
Content Organization

- **AI systems and output:** how to interpret AI output and how to recognise AI limitations. This includes that AI scores (e.g., 0-100) reflect a relative level of suspicion and are not standardised across vendors, and that performance can vary by case.
- **AI influence on radiologist behaviour**: The second section uses observer study data to demonstrate how AI influences radiologist behaviour. Examples are shown in Figure 1, demonstrating that radiologists tend to align with AI assessments, both when AI is correct (Figures 1A and 1D) and when it is not (Figures 1B and 1C).[7]
- **Implementation strategies**: The third section covers real-world implementation strategies (e.g., decision support, triage, standalone AI reader) and their practical implications for the radiologists' role and workflow.

Key points/High-yield take home message

- Effective use of AI in breast cancer screening depends on understanding both algorithm performance and radiologist-AI interaction.
- Hands-on experience is essential for radiologists to develop confidence and competence in AI-supported reading, and for the successful integration of AI into breast cancer screening programmes.

More information about the AI masterclass can be found at: https://www.lrcb.nl/product/masterclass-ai-2026/



A) Cancer and AI markings in the right breast
Recalls: 4/9 radiologists without AI, 8/9 radiologists with AI

B) Cancer in the left breast, no AI markings
Recalls: 6/9 radiologists without AI, 3/9 radiologists with AI

C) No cancer, AI markings in the left breast
Recalls: 2/9 radiologists without AI, 7/9 radiologists with AI

D) No cancer and no AI markings
Recalls: 7/9 radiologists without AI, 3/9 radiologists with AI

References

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[7] Gommers JJJ, *et al.* Automation bias and timing of artificial intelligence decision support in screening mammography. *SPIE Proc Med Imaging 2026*.

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