



1 Objectives



To evaluate and compare the latest evidence on **early detection and screening strategies** for breast cancer, with a focus on:

- ✓ Improving early diagnosis and survival rates
- ✓ Assessing the role of genetic, imaging and molecular approaches
- ✓ Identifying barriers to access and implementation
- ✓ Providing evidence-based recommendations for clinical practice and policy

2 Method

Systematic review of recent literature (2015–2026), including clinical trials, meta-analyses and guidelines from reputable sources (e.g. ASCO, NCCN, ESMO, WHO).



Database search
(PubMed, Cochrane, Google Scholar)



Inclusion criteria
(human studies, relevant to screening / early detection)



Data extraction & analysis
(qualitative and quantitative)



Evidence-based

- Clinical trials
- Meta-analyses
- Guidelines

3 Screening Approaches Reviewed



Genetic Risk
BRCA1 / BRCA2

- Identifies high-risk individuals
- Guides personalized screening and prevention (e.g. PARP inhibitors)
- Family history & genetic counseling



Imaging
Digital Mammography & MRI



- Detects tumors at earlier stages
- Higher sensitivity in dense breasts
- MRI for high-risk populations



Liquid Biopsy
Circulating Biomarkers



- Detects cancer-related DNA/RNA
- Monitors treatment response
- Potential for earlier, non-invasive screening

4 Results

Detection Rate by Method
(Early-Stage Cancers)



Key Finding

Combining multiple modalities improves detection rates and enables earlier diagnosis.

Impact on Stage at Diagnosis (Comparative)



Earlier stage at diagnosis is associated with better survival and treatment outcomes.

Key Takeaways



Multi-modal screening increases early-stage detection.



Genetic testing is vital for high-risk populations.



Liquid biopsy shows promise but needs further validation.



Access Gap

Significant disparities in screening access, especially in low-resource settings, require urgent attention.

5 Conclusion



Early detection saves lives. A combination of genetic, imaging and liquid biopsy approaches, along with improved access and awareness, can significantly reduce breast cancer mortality and improve long-term outcomes.



The future lies in **personalized, accessible and equitable screening** for all.

