



WHO Position Paper on Mammography Screening

Summary of Recommendations

Introduction

- Mammography is an X-ray of the breast to identify malignant changes. It is used both as a diagnostic tool to examine symptomatic women and as a screening test in asymptomatic women.
- The goal of screening mammography is to detect breast cancer early, prior to feeling a breast lump; while ensuring consistently high quality mammography results with minimal exposure of the women to radiation.
- The success of mammography screening depends not only on the quality performance of the technology, but on having an organized population based screening program, that achieves high screening coverage of women in the at risk age group, followed by diagnosis and treatment for women detected with abnormal results.

Key Questions

1. WHAT ARE THE MAMMOGRAPHY SCREENING RECOMMENDATIONS?

- In **well-resourced settings, organized population-based** mammography screening programs are **recommended** for women aged **50-69 years, every 2 years**. In these settings, screening programs for women 40- 49 years of age and 70-75 years of age is suggested only if it is conducted in the context of rigorous research, monitoring and evaluation.
- In **limited resource settings with relatively strong health systems**, organized population-based mammography screening programs are **suggested** for women aged **50-69 years, every 2 years** only if the conditions for implementing a screening program are met. In these settings, WHO **recommends against** mammography screening for women **40-49** years of age and **70-75** years of age.
- In **limited resource settings with weak health systems**, organized population-based mammography screening programs may not be cost-effective and feasible. Early diagnosis of symptomatic women with prompt diagnosis and treatment should be the priority. In these settings, clinical breast examination, seems to be a promising screening approach.

2. WHAT ARE THE CONDITIONS FOR SUCCESSFUL MAMMOGRAPHY SCREENING PROGRAMS?

- Sufficient health system and financial resources to sustain mammography screening and assure diagnosis and treatment, including the requisite equipment, infrastructure, workforce, quality assurance, and monitoring processes.
- An administrative structure responsible and accountable for implementation, quality assurance, and evaluation of the breast cancer screening program.
- Validated protocols for all steps in the screening process, including identification of target group, invitation of eligible women to attend screening, performing the screening test and assuring its quality, referral mechanisms and subsequent diagnosis and treatment of lesions detected through screening.

- Communication and education of women and providers, with culturally appropriate, balanced and objective information about breast cancer screening, its benefits and harms.
- Adherence to evidence-based guidelines for screening, diagnosis and treatment, that include standards for professional and technical quality assurance.
- Information system to record data across the entire screening process, including call and recall of participants for follow-up of abnormalities detected in screening, and for program monitoring.
- Regular monitoring, evaluation and reporting of program performance and impact, using process and outcome indicators, that includes women's safety and satisfaction.

3.WHAT ARE THE BENEFITS AND HARMS OF MAMMOGRAPHY SCREENING?

- Results from mammography screening programs suggest a reduction in breast cancer mortality by approximately 20% at 11 years of follow up.
- Mammography screening, as with many screening tests, can lead to false positive results. This has been estimated to be approximately 20%.
- Mammography screening can lead to overdiagnosis. At this time, there is significant uncertainty about the quantitative estimates of overdiagnosis in the different age groups.

4.WHAT FREQUENCY IS RECOMMENDED FOR MAMMOGRAPHY SCREENING?

- Screening programs with an interval of two years seems to provide the best trade off between benefits and harms, in the settings where mammography screening is recommended.

5.WHAT ARE THE RESEARCH PRIORITIES FOR MAMMOGRAPHY SCREENING?

- Evaluation of over-diagnosis, over-treatment, health related quality of life issues, and the optimal screening interval of mammography screening programs in various settings.
- Implementation research to evaluate the feasibility of implementing mammography screening programs in limited resource settings.
- Evaluation of alternative breast cancer early-detection approaches that can work in limited resource settings, including validation of the protocols of low-cost screening methods.

Conclusions

- Population based mammography screening programs should be implemented only when the health system and financial resources are available to achieve a high screening coverage, diagnose and treat women, and assure quality standards.
- Women aged 50-69 years should be the priority group for organized mammography screening programs.
- More research is required, especially in limited resource settings to evaluate mammography screening in younger age groups, and to evaluate alternative breast cancer screening approaches.

These recommendations are based on systematic reviews of randomized trials and observations studies. The recommendations are focused on women at average risk for breast cancer, for various resource settings and different age groups (40-49 years of age, 50-69 years of age, 70 years of age and older).

Table 1. WHO recommendations regarding implementation of mammography screening programs

Population Based Mammography Screening Program Recommendations by age group and by resource level			
Resource Level	40-49 years of age	50-69 years of age	70-75 years of age
Well-resourced settings with strong health systems¹	Suggested , if conducted in the context of rigorous research, monitoring and evaluation	Recommended , if conditions for implementing an organized program are met, with a screening interval of 2 years	Suggested , if conditions are met and only after programs are established for women aged 50-69 years of age.
Limited-resource settings with relatively strong health systems²	Recommended against	Suggested if conditions for implementing an organized screening program are met, with a screening interval of 2 years	Recommended against
Limited-resource settings with weak health systems³	Recommended against	Early diagnosis of women with symptomatic lesions, followed by treatment, should be the priority in this setting. Clinical breast examination seems to be a promising screening approach for this setting.	Recommended against

¹ Very strong health systems that, in general, have capacity to develop and sustain organized population-based mammography screening.

² Existing capacity with potential to gradually develop and sustain population-based mammography screening programs.

³ very limited capacity where mammography screening is not cost-effective, feasible and affordable.

Reference : World Health Organization. WHO Position Paper on Mammography Screening, 2014. **Available at:** www.paho.org/cancer