



Title	Screening Mammography: A Reassessment
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Aim

Québec's Ministère de la Santé et des Services sociaux (MSSS) asked AETMIS to re-examine the quality of the scientific evidence on which the provincial mammography screening program is based and on the pertinence of extending screening to women younger than 50 years of age.

Conclusions and results

A Cochrane Collaboration Group review challenged the effectiveness of mammography screening in reducing breast cancer deaths. The AETMIS study found that most of the 8 mammography screening trials assessed had serious problems with validity. Some trials were not randomized, and most studies did not provide baseline characteristics of women in the experimental and control groups. Documentation was often poor or inconsistent. Regarding trial methodologies, the author found an inverse relationship between the quality of the study and the reduction in mortality as a result of screening. Hence, the more valid studies tend to show a smaller reduction in mortality (9%) than the weaker studies do (15%–23%). The authors hypothesize that the weak contrasts produced by these earlier studies can be explained partly by less refined equipment and techniques, single rather than double breast views and inconsistent measuring periods. No trial was designed and conducted in a way that used the full potential of modern programs that might detect tumors earlier and further reduce mortality.

Recommendations

- Existing scientific trials, despite their flaws, support mammography screening for women aged 50 years and older. Modern screening programs may achieve earlier detection and greater reductions in mortality than these earlier trials.
- Trial data do not provide scientific justification for screening women younger than 50 years of age, although screening of individual women, based on personalized risk assessment, could be of benefit.

- The following quality controls could be consistently applied to Quebec's screening program: high-quality mammographic films, double reading of films, a reading volume for radiologists that allows them to acquire and maintain the expertise needed for early detection.
- Efforts to increase participation should not overstate the benefits of mammography nor understate the risks and uncertainties.

Methods

This meta-analysis analyzed 8 screening mammography trials (conducted between 1963 and 1982) according to 3 criteria:

Relevance: Only studies that contrasted screening with no screening were included (1 study was excluded).

Validity: Each trial was scored according to the strength of contrast between the experimental and cohort groups in terms of their exposure to high-quality mammography and with regard to other validity criteria, in particular the adequacy of randomization, baseline equivalence of both cohorts, exclusion of pre-existing cancers, and followup of results.

Precision: Trial results were weighted by the inverse of their variance. Trials were ranked based on their scores on the validity scale (good or medium quality, poor quality, and flawed) and then progressively combined.

Further research/reviews required

These recommendations should be reviewed in several years when the results of the ongoing UK Age Trial become available.