

Evidence for the reduction of breast cancer mortality due to mammographic screening: a systematic review

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Background: Although initially praised as a universal achievement to reduce the burden of breast cancer, the benefits and harms of mammography screening have been debated heatedly. The aim of this systematic review was to quantify the impact of organized screening on breast cancer-specific mortality across European regions.

Methods: Six databases were searched including Embase, Medline and Web of Science from inception to April 2016. Predefined inclusion and exclusion criteria regarding population, intervention, control, outcome, and study design were applied by two reviewers independently to identify all eligible studies which showed the effect of screening on breast cancer mortality. Only original studies in English with a minimum of five years of follow-up that were either randomized controlled trials (RCTs) or observational studies were included. Validated tools were used to assess the quality of the findings such as risk of bias of the included studies.

Results: Of the 3,336 references initially retrieved, 58 were included in the final analysis. Those included 37 cohort studies, 14 case-control studies and 7 RCTs of which none were from Eastern Europe. The breast cancer mortality reduction for screened vs. non-screened women varied from 2% to 89% in Northern Europe, between 50% and 67% in Southern Europe and 12% and 58% in Western Europe.

Conclusion: This systematic review provides evidence that breast cancer screening reduces mortality from breast cancer in all European regions where screening was implemented and monitored, even though there was a wide range of results. Although there is general agreement on different aspects of the screening policy throughout Europe such as the screening test, the core target age range and the screening interval, there are substantial differences within the EU regarding e.g. coverage and quality. Quantification of the actual effects of screening in terms of benefits is still lacking for Eastern Europe.

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