

Evaluation of Benefits and Risks of Breast Cancer Screening

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Abstract

Introduction: Breast cancer is the second leading cause of cancer deaths among women. Mammography screening may be associated with reduced breast cancer mortality but can also cause harm. Breast cancer screening holds a prominent place in public health, health care delivery, policy, and women's health care decisions. Whether breast cancer screening does more harm than good has been debated extensively. The main questions are how large the benefit of screening is in terms of reduced breast cancer mortality and how substantial the harm is in terms of overdiagnosis.

Conclusions: The expected major benefit is reduction in mortality from breast cancer. The major harm is overdiagnosis and its consequences; overdiagnosis refers to the detection of cancers on screening, which would not have become clinically apparent in the woman's lifetime in the absence of screening. The consequences of overdiagnosis matter, women are turned into patients unnecessarily, surgery and other forms of cancer treatment are undertaken, and quality of life and psychological wellbeing are adversely affected. Meta-analysis of one research's trials with 13 years of follow-up estimated a 20% reduction in breast cancer mortality in women invited for screening. For the UK screening programs, this currently corresponds to about 1300 deaths from breast cancer being prevented each year, or equivalently about 22 000 years of life being saved. However, this benefit must be balanced against the harms of screening, especially the risk of overdiagnosis. The conclusion was that screening programs should continue, while acknowledging that harms, such as the occurrence of false-positive results and overdiagnosis, can have a negative impact on a woman's life. Research should also explore other breast cancer screening strategies and information on the balance sheet of the benefits and harms of breast cancer screening should help women and their physicians to make an informed choice.