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Title **Screening Mammography for Women Aged 40 to 49 Years: Update**

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Aim

To review the new mortality reduction estimates for screening starting from 40 years of age; to assess the magnitude of screening-related adverse effects, especially those associated with radiation exposure, additional diagnostic tests, and overdiagnosis; to enable Québec's Department of Health and Social Services (MSSS) and women and their physicians to make informed decisions regarding participation in screening mammography starting from 40 years of age.

Conclusions and results

Mammographic screening starting from 40 years of age reduces breast cancer mortality by about 15% for all women invited to screening, but the reduction is around 25% among women who are actually screened, and this is the relevant consideration for women weighing the benefits and harms of screening. Although screening mammography reduces mortality, it also has drawbacks, eg, exposition to ionizing radiation. These drawbacks significantly counterbalance the benefits that women in this age group could gain from participating in a systematic screening program. Hence, it is not advisable to extend the screening program to all women aged 40 to 49 years. Currently, doctors can recommend mammographic screening to some women in that age group after assessment of their individual risk. Other recommendations were made on the organization of the *Programme québécois de dépistage du cancer du sein* (Québec's Breast Screening Program) and on ways to strengthen its quality-assurance measures to optimize the net benefits for women screened.

Methods

Pool the results of the UK Age Trial with those of the other randomized mammography trials conducted in women younger than 50 years; present these results by comparing the expected outcomes for a cohort of 1000 women aged 40 years assumed to participate in annual screening for 10 years, with the outcomes of unscreened women; examine the amount of radiation absorbed during a mammogram and its carcinogenic effects, according to different modeling analyses, and also look at the additional adverse effects arising from diagnostic investigations and overdiagnosis; compare the conditions and parameters of Québec's organized breast screening program with programs implemented during the major clinical trials from which the estimates were derived in order to evaluate the extent to which these trials' outcomes might be reproduced in the Québec program.

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