
Mammography screening does not work and leads to substantial overdiagnosis

What did we investigate in this study and what did we find?

We studied whether breast screening has fulfilled its promise of early detection and published our findings on 10 January 2017 in *Annals of Internal Medicine*. The [study's](#) dataset is unique because breast screening was introduced at different times in the Danish regions. We had a contemporary control group of same-age women over a 17 year period. We therefore did not need to "guess" what would have happened in the absence of screening.

Screening found many small tumours that would never have come to the women's attention without screening in their remaining lifetime. This is called overdiagnosis. This well-known harm of cancer screening is the main reason why we do not screen for prostate cancer. The main findings from the study are that:

- Screening did not reduce the number of late stage tumours (those bigger than 2 cm), which means that breast screening is unlikely to reduce breast cancer mortality or lead to less invasive treatment.
- 1 in 3 breast cancers detected in women offered screening are likely overdiagnosed.

What are the implications of our study?

Women have been told for decades that breast screening saves lives; that the reduction in breast cancer mortality is substantial; that screening leads to less invasive treatment; and that the harms are small and nothing to worry about. Our study shows that the premises for these benefits have not been met.

Breast screening has substantial harms, of which overdiagnosis is generally recognised as the most serious. A breast cancer diagnosis is a life-changing event with profound implications for the psychological well-being and quality of life for the woman affected and her family. The overdiagnosis also leads to unnecessary treatment with surgery, radiotherapy and sometimes chemotherapy, all of which are known to have serious, sometimes lethal, harms. Screening does not reduce mortality and it increases the amount of invasive surgery, including mastectomies.

Additionally, breast screening leads to a 25 % to 50 % risk of being recalled due to a false positive test result if women attend screening for the often recommended 20 year period. A false positive recall often means more mammograms and often biopsies. The time until a breast cancer diagnosis is excluded can be very stressful, and for many women the negative implications for their quality of life last for more than 3 years after they have been declared free from cancer.

Should mammography screening be stopped?

Independent expert groups in Switzerland and France have recommended that breast screening be stopped or reduced substantially. Elsewhere, guidelines are being changed, e.g. the American Cancer Society now [recommend less frequent screening of a narrower age group](#) than just two years ago. Our study supports this development.

The full report is titled: "[Breast Cancer Screening in Denmark: A Cohort Study of Tumor Size and Overdiagnosis.](#)" The authors are K.J. Jørgensen, P.C. Gøtzsche, M. Kalager, and P. Zahl.

For more information on breast cancer screening and the implication of the findings, please read *Annals of Internal Medicine's* [Editorial](#) and [Summary for patients](#).

Other relevant studies on breast cancer screening from the Nordic Cochrane Centre:

[Cochrane Review: Screening for breast cancer with mammography](#)
[Mammography screening is harmful and should be abandoned](#)

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