

Is too much cancer screening hazardous to your health?

The example of breast cancer

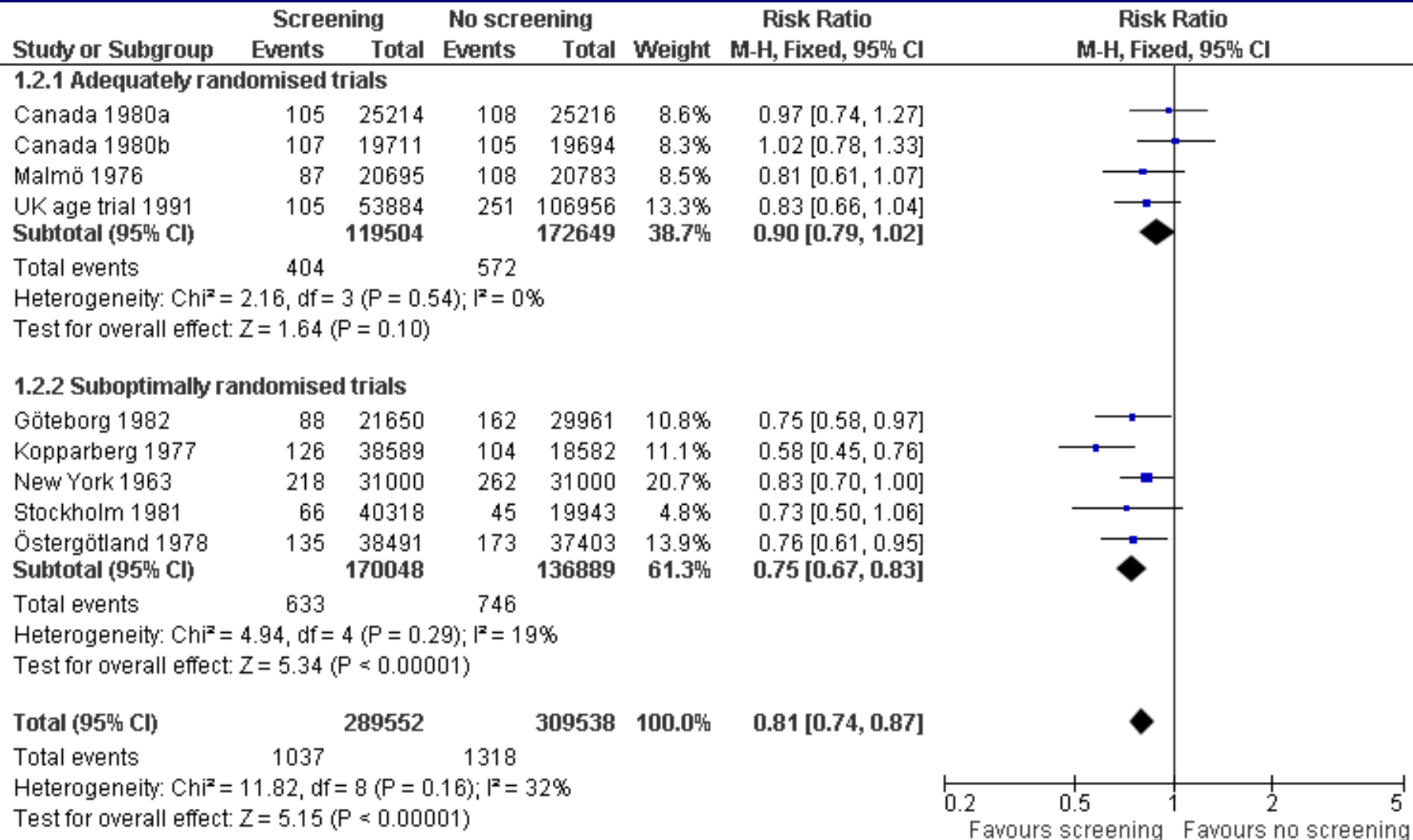


Peter Gøtzsche

*Researcher and director of the Nordic Cochrane Centre,
author of the work “Mammography screening.
Truth, lies and controversy” (2012).*



Mortality ascribed to breast cancer after 13 years (CD001877)

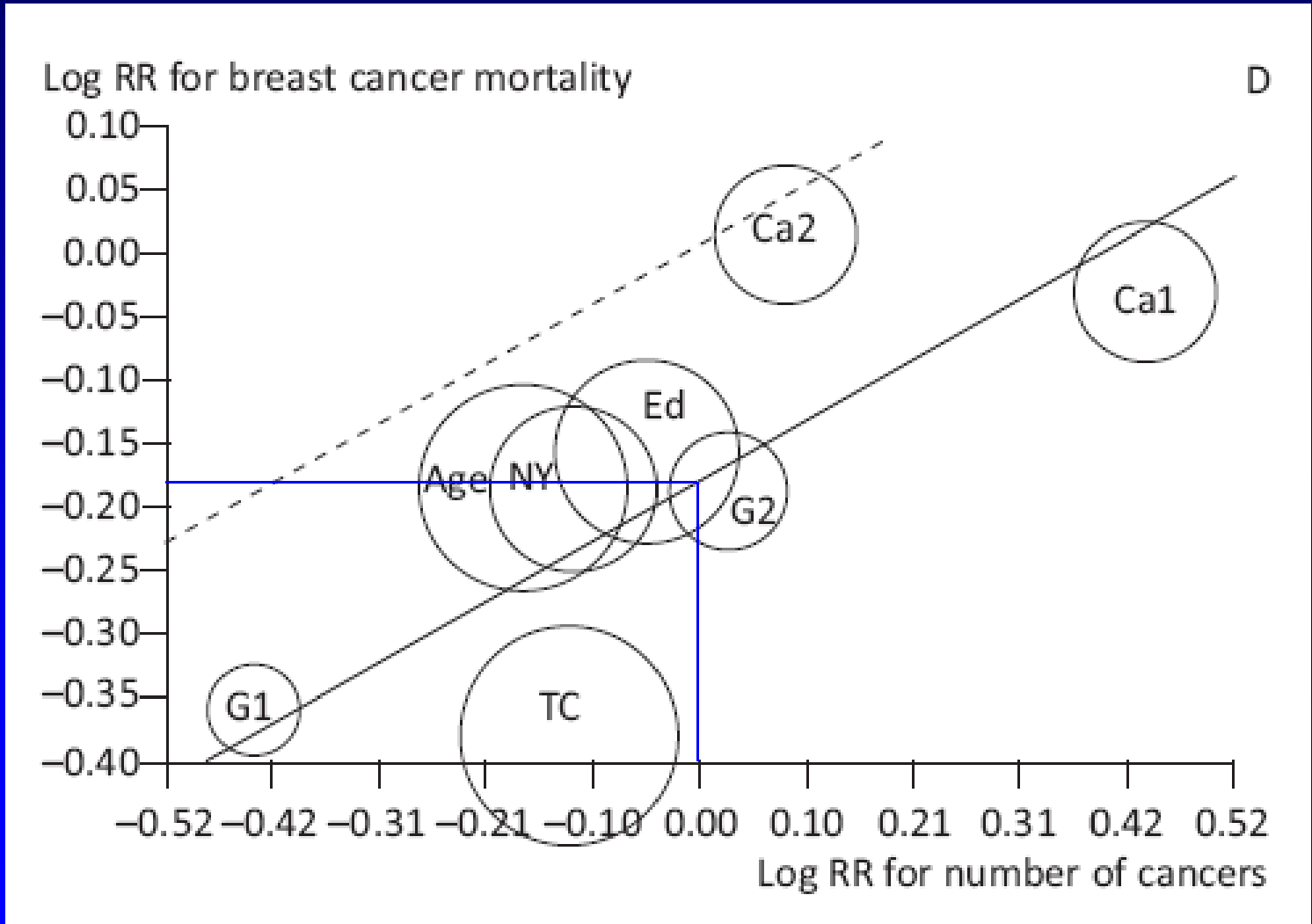


The trials that have reported the largest reductions in breast cancer mortality have:

- used poor equipment
- had long intervals between screens
- screened the control group early, after 3-5 years
- used only one view mammography

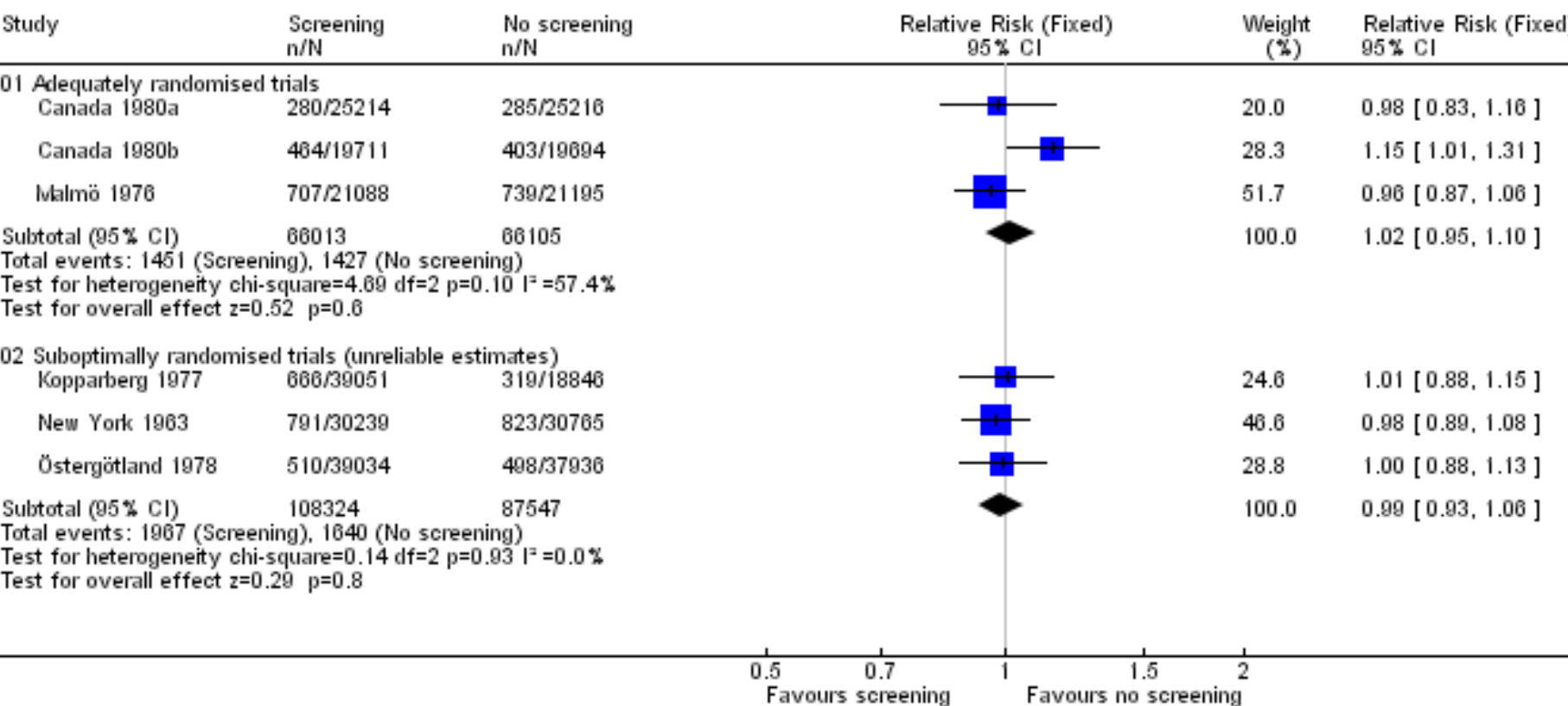
This means that the trials must be biased

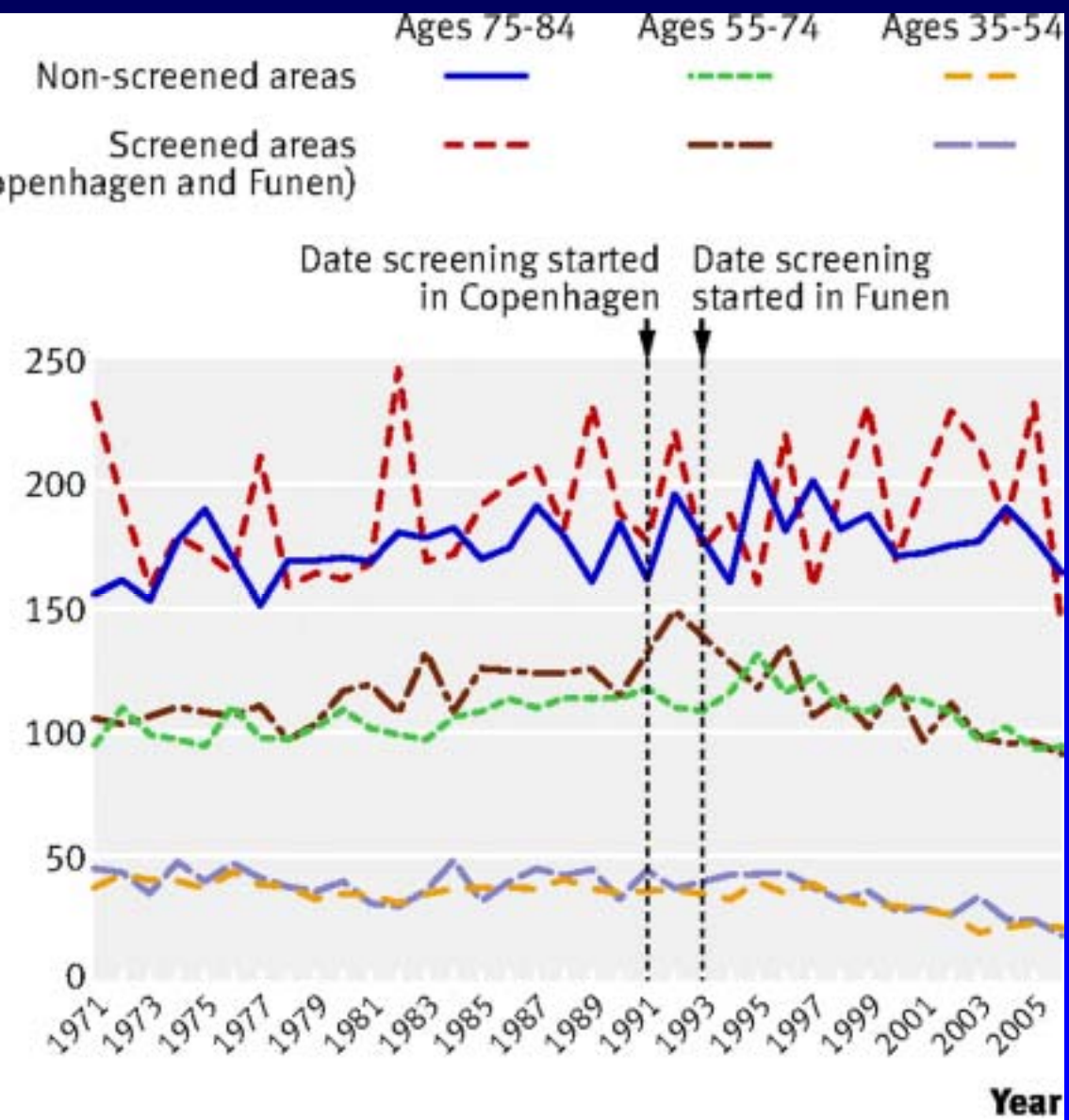
Screening effectiveness of zero predicts 16% reduction in breast cancer mortality



All cancer mortality

Review: Screening for breast cancer with mammography
 Comparison: 01 Screening with mammography versus no screening
 Outcome: 07 Deaths ascribed to any cancer, all women





Unadjusted breast cancer mortality rates for screened and non-screened areas in Denmark

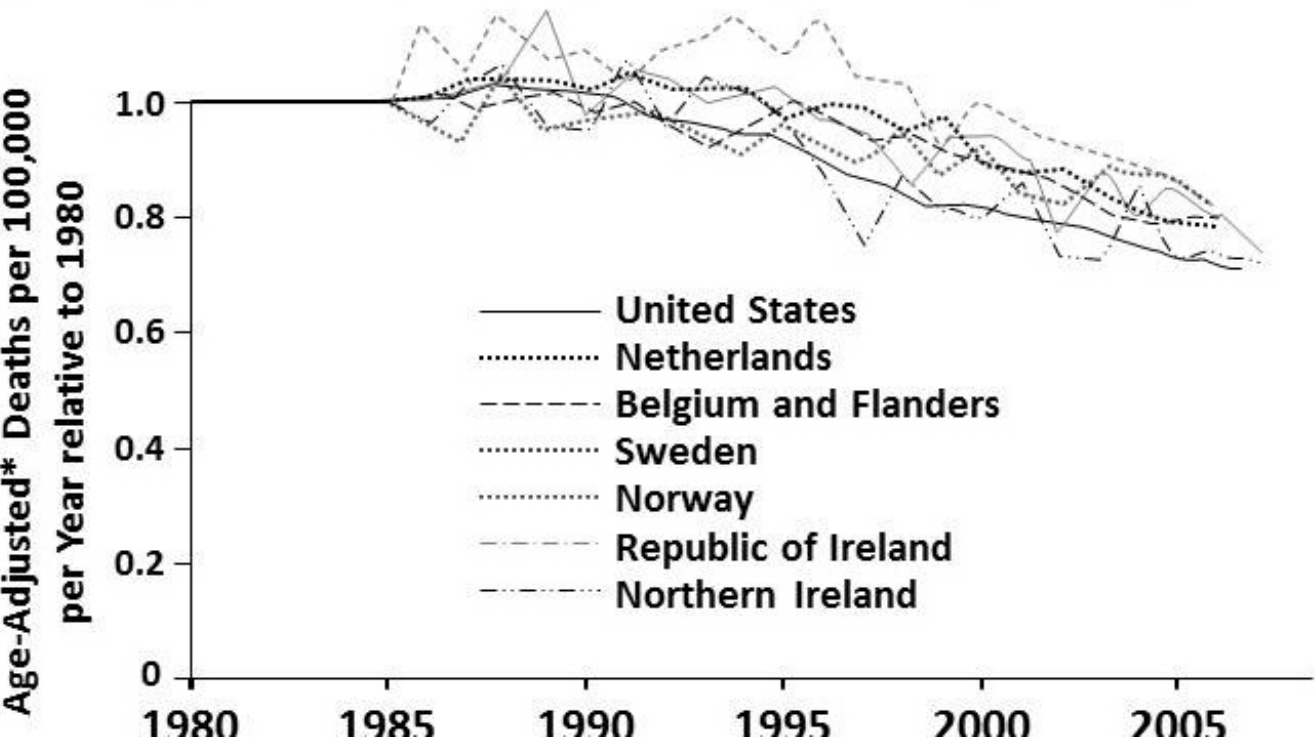
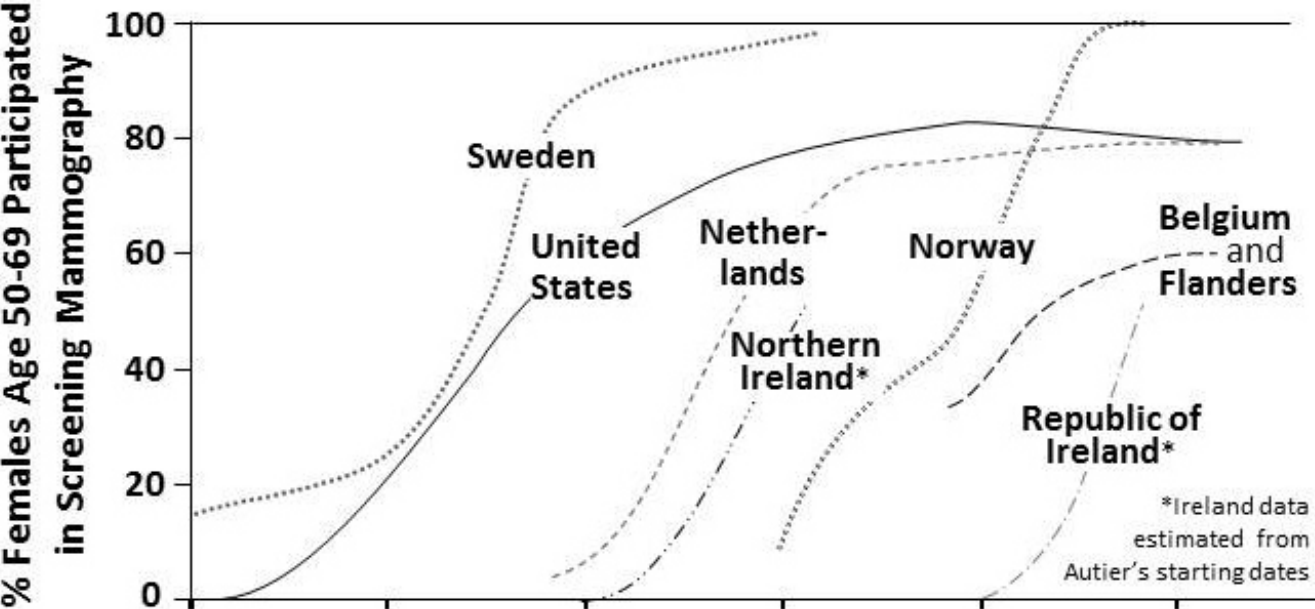
Jørgensen et al.
BMJ 2010;340:c1241

Any effect of screening in Denmark?

Annual reductions in breast cancer mortality

| | Screened areas (20%) | Control areas (80%) |
|-------------|-------------------------|------------------------|
| 55-74 years | 1% | 2% |
| 35-54 years | 5% | 6% |
| 75-84 years | little change | little change |

Reductions likely due to improved treatment, greater breast cancer awareness, and changes in risk factors, not to screening mammography



From Archie Bleyer,
similar figure in
BMJ 2011;343:d563

Builds on data
From Autier et al.
BMJ 2011;343:d441

International
Prevention
Research
Institute (iPRI),
Lyon, France

Screening does not reduce the occurrence of advanced cancers and therefore cannot work

Autier, Ann Oncol 2011

Data from Australia, Italy, Norway, Switzerland, The Netherlands, UK and the USA.

Rate of advanced cancers (bigger than 20 mm) was not reduced with screening.

Kalager, Ann Intern Med 2012

Norwegian screening programme.

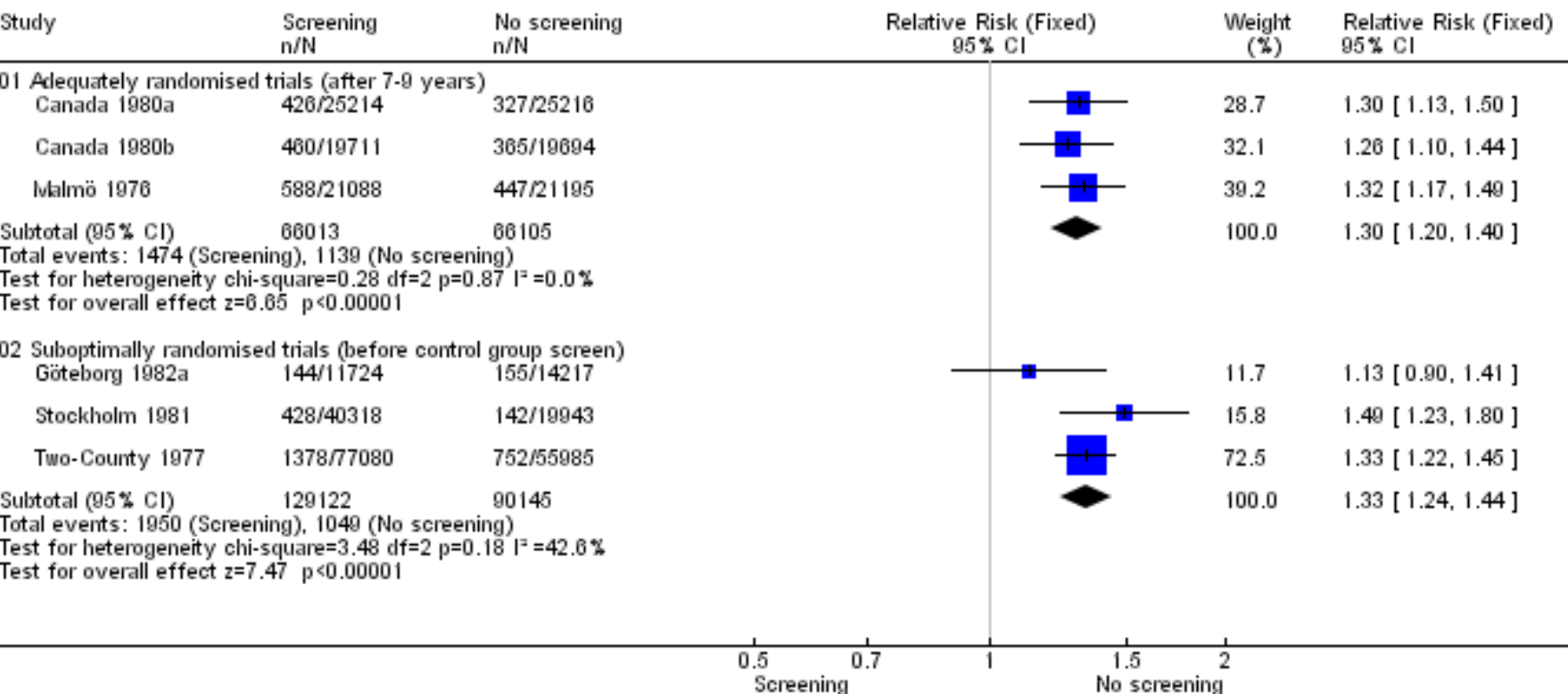
Rate of advanced cancers (stage III and IV disease) exactly the same in screened and non-screened areas.

What is overdiagnosis with screening?

The detection of cancers, which would not have been detected clinically in the remaining lifetime of the people.

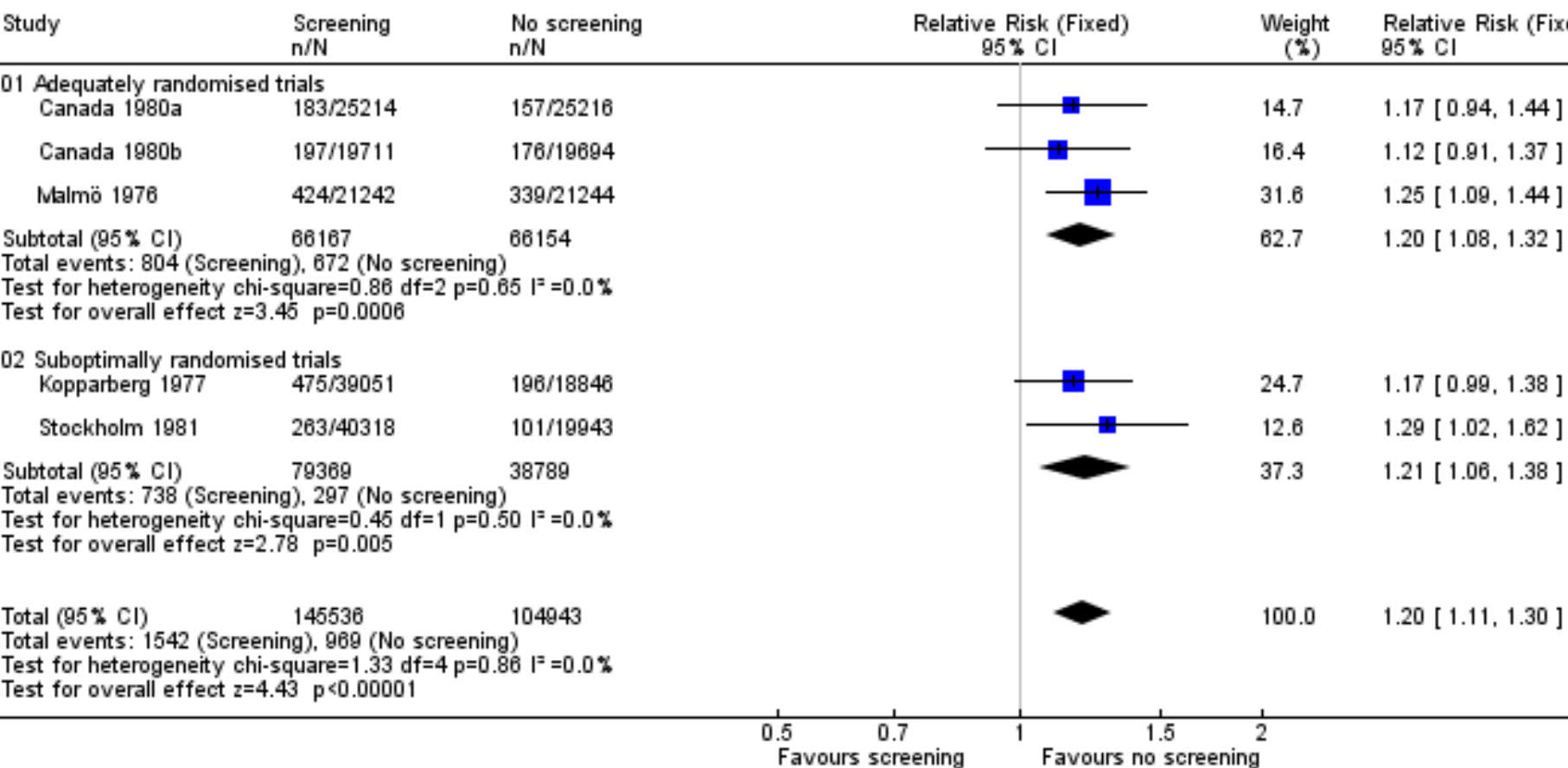
Number of cancers (incl. carcinoma in situ)

Review: Screening for breast cancer with mammography
 Comparison: 01 Screening with mammography versus no screening
 Outcome: 21 Number of cancers



Mastectomies

Review: Screening for breast cancer with mammography
 Comparison: 01 Screening with mammography versus no screening
 Outcome: 15 Number of mastectomies



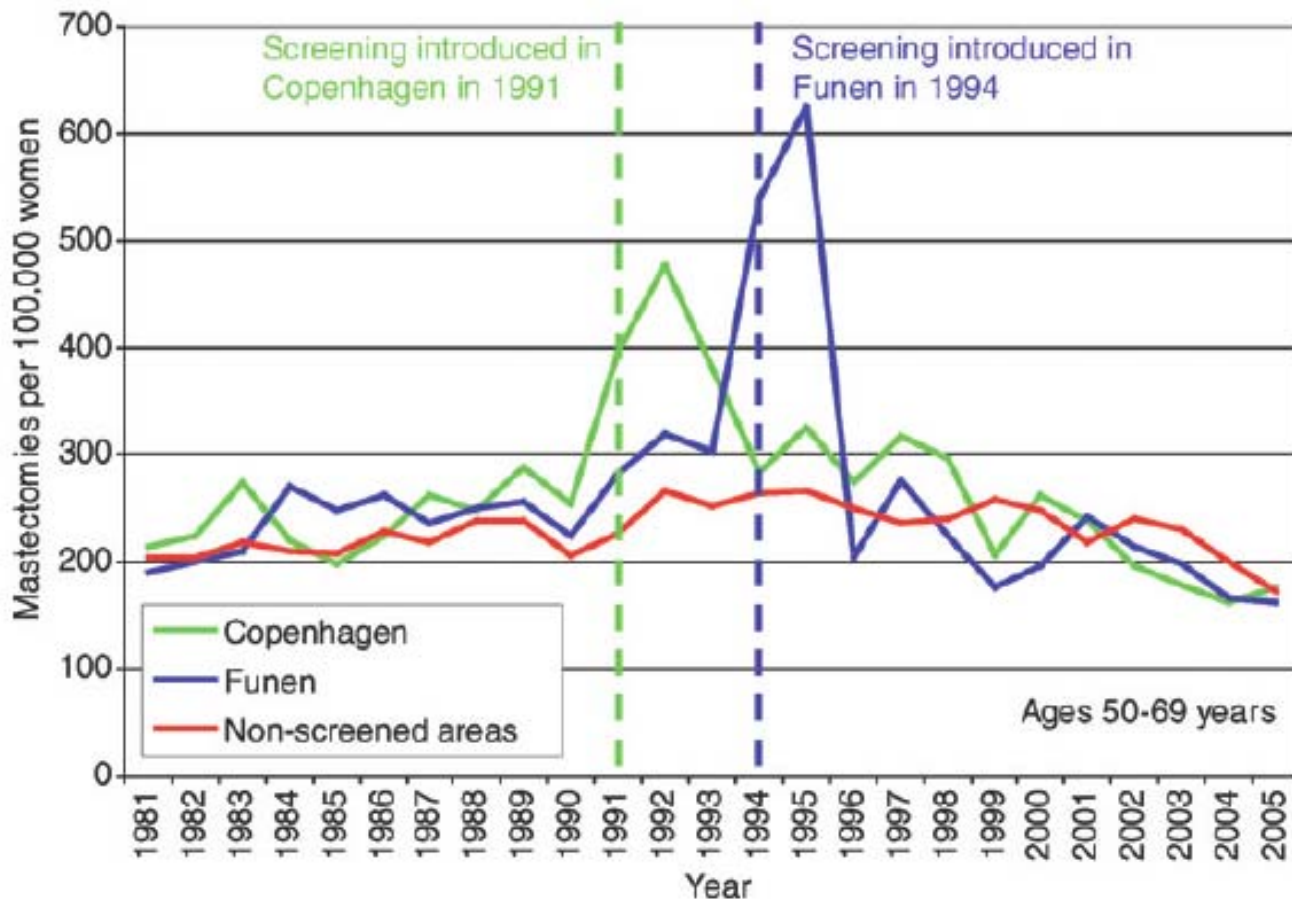
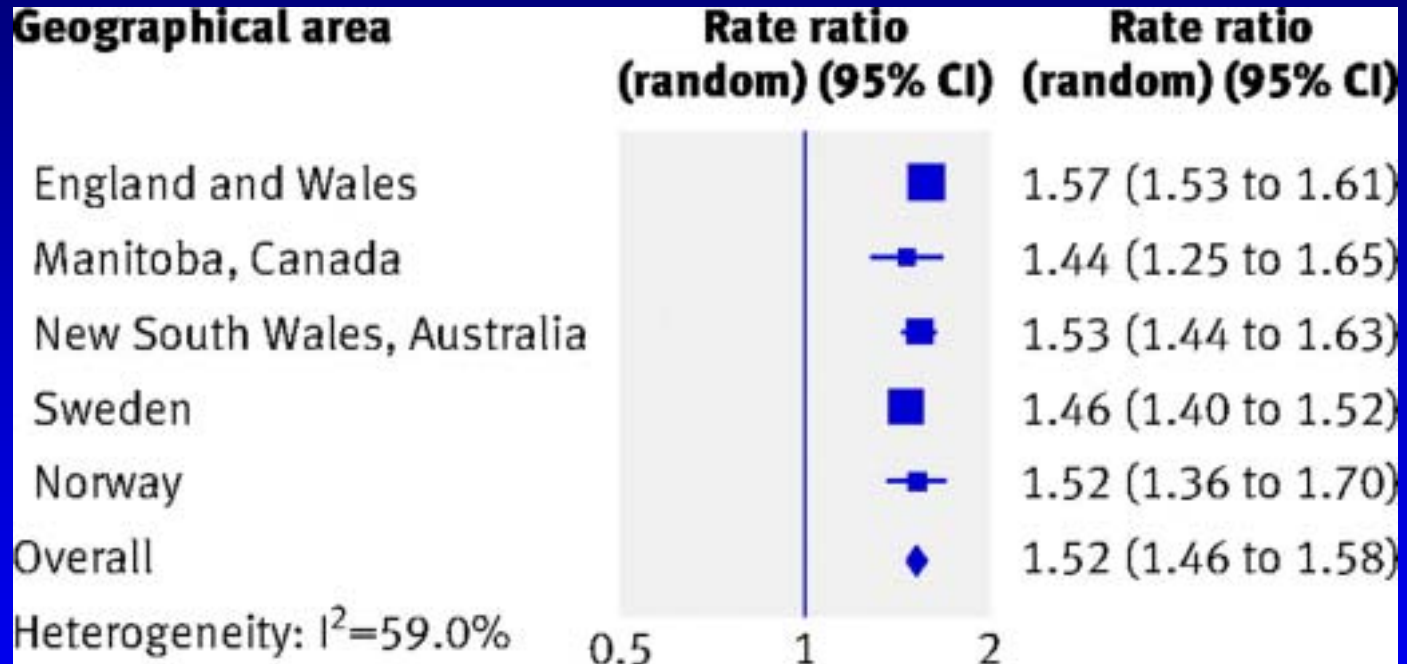


Figure 6: Graph shows mastectomy rates in women aged 50–69 years in Denmark. Screening in this age group began in 1991 in Copenhagen and in 1994 in Funen. Nonscreened areas represent 80% of the Danish population (43).

Fig 8 Meta-analysis of overdiagnosis of breast cancer (including carcinoma in situ) in publicly available mammography screening programmes



Jorgensen, K. J. et al. *BMJ* 2009;339:b2587

Breast cancer screening

“Catch it early”

“It’s better to find a small tumour than a big one”

“By finding the tumours early, more women will avoid a mastectomy”

“Mammography screening saves lives”

These slogans come from cancer charities, information material from screening centres, or National Boards of Health.

They are all wrong, misleading or doubtful.

Breast cancer screening

“Catch it early”: the average woman has harboured the cancer for 21 years before it acquires a size of 10 mm.

“It’s better to find a small tumour than a big one”: tumours detected at screening are generally harmless; there has not been a reduction in metastasised tumours in countries with screening.

“By finding the tumours early, more women will avoid a mastectomy”: no, more women will get a mastectomy.

“Mammography screening saves lives”: we don’t know and it is not likely, e.g. total cancer mortality is the same.

What do women know?

- 68% believed screening reduced their risk of contracting breast cancer,
- 62% that screening at least halved mortality,
- 75% that 10 years of screening saves 10 of 1000 participants (an overestimate of 20 times)
- only 8% were aware that participation can harm healthy women
- 15% believed their lifetime risk of contracting the disease was more than 50% (an overestimate of five times).

(Gøtzsche et al, BMJ 21 Feb 2009)

BREAST SCREENING
The Facts



BREAST
SCREENING
What the
leaflets don't
tell patients

PLUS Prenatal screening
for Down's syndrome
Providing antiretroviral
therapy during conflicts
Alzheimer's disease

**Breast screening:
the facts - or maybe not
(BMJ 21 Feb 2009)**

**The NHS leaflet doesn't say a
word about the most important
harm of screening: overdiagnosis
and overtreatment.**

**"the responsibility for the
screening programmes must be
separated from the responsibility
for the information material"**

BREAST SCREENING

The Facts



Other leaflets

November 2009, survey of 8 leaflets in Germany, Italy, France and Spain. Very similar results.

- no mentioning of overdiagnosis.
- 4 leaflets recommended breast self-examination, although this is harmful.
- the brochures attempted to directly influence women with suggestive phrases to pressurise them into participation.

(Gummersbach, Eur J Publ Health 2009, 5 Nov)

Available at:
www.cochrane.dk
in 13 languages

DÉPISTAGE DU CANCER DU SEIN PAR LA MAMMOGRAPHIE



Quels sont les bienfaits et les dommages de la participation à un programme de dépistage pour le cancer du sein?

Combien de femmes tireront profit du dépistage et pour combien sera-t-il préjudiciable?

Quelles sont les preuves scientifiques de ce dépistage?

Tout ce que vous avez toujours voulu savoir sur le dépistage du cancer du sein

Publié par le Nordic Cochrane Centre 2012

Résumé

Lorsque nous avons publié cette brochure en 2008, le résumé était le suivant:

Il peut être raisonnable de participer au dépistage du cancer du sein par mammographie, mais il peut être tout aussi raisonnable de ne pas s'y soumettre, parce que ce dépistage présente à la fois des bienfaits et des dommages.

Si 2000 femmes sont examinées régulièrement pendant 10 ans, une seule d'entre elles bénéficiera réellement du dépistage par le fait qu'elle évitera ainsi la mort par cancer du sein.

Dans le même temps, 10 femmes en bonne santé deviendront, à cause de ce dépistage, des patientes cancéreuses et seront traitées inutilement. Ces femmes perdront une partie ou la totalité de leur sein et elles recevront souvent une radiothérapie et parfois une chimiothérapie.

En outre, environ 200 femmes en bonne santé seront victimes d'une fausse alerte. Le stress psychologique de l'attente du résultat pour savoir si elles ont vraiment un cancer et celui de la suite des soins, peut être sévère.

Ces chiffres proviennent d'essais randomisés de dépistage par mammographie. Cependant, depuis que ces essais ont été effectués, le traitement du cancer du sein s'est considérablement amélioré. Les études les plus récentes suggèrent que le dépistage par mammographie peut ne plus être efficace pour réduire le risque de mourir du cancer du sein.

Le dépistage produit des patientes atteintes d'un cancer du sein à partir de femmes en bonne santé qui n'auraient jamais développé de symptômes de cancer du sein. Le traitement de ces femmes en bonne santé augmente leur risque de mourir, par exemple d'une maladie cardiaque et de cancer.

Il ne semble donc plus aussi raisonnable de participer au dépistage du cancer du sein. En fait, en évitant de participer au dépistage, une femme va diminuer son risque de recevoir un diagnostic de cancer du sein. Cependant, malgré cela, certaines femmes peuvent encore souhaiter participer au dépistage.

Similarities between screening for prostate cancer and breast cancer

Small effect on specific cancer mortality, if any

Huge overdiagnosis that harms many healthy men and women

We don't screen for prostate cancer

Why do people wish to screen for breast cancer?