

# Breast screening

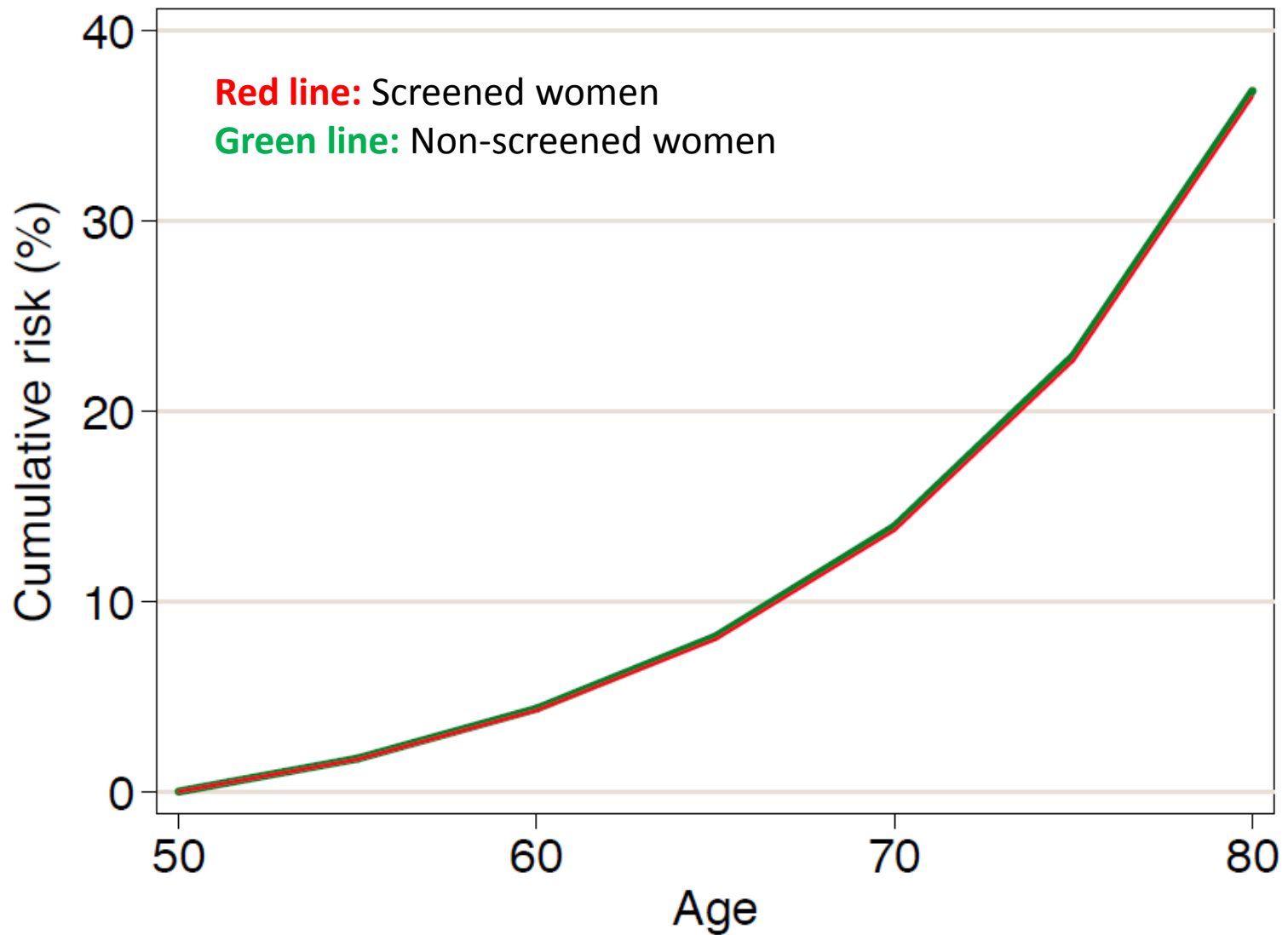
How to interpret the evidence?

*Mortality reduction*

Karsten Juhl Jørgensen

*MD, DrMedSci*

The Nordic Cochrane Centre



**Red line:** Screened women  
**Green line:** Non-screened women

# Flexible sigmoidoscopy versus faecal occult blood testing for colorectal cancer screening in asymptomatic individuals (Review)

Holme Ø, Bretthauer M, Fretheim A, Odgaard-Jensen J, Hoff G



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- Reduced incidence carries great weight
- Mechanism of effect differs fundamentally between programmes
- Which screening programmes we use is as much about politics and timing of the evidence as science and the benefit/harm balance

# General health checks in adults for reducing morbidity and mortality from disease (Review)

Krogsbøll LT, Jørgensen KJ, Grønhøj Larsen C, Gøtzsche PC



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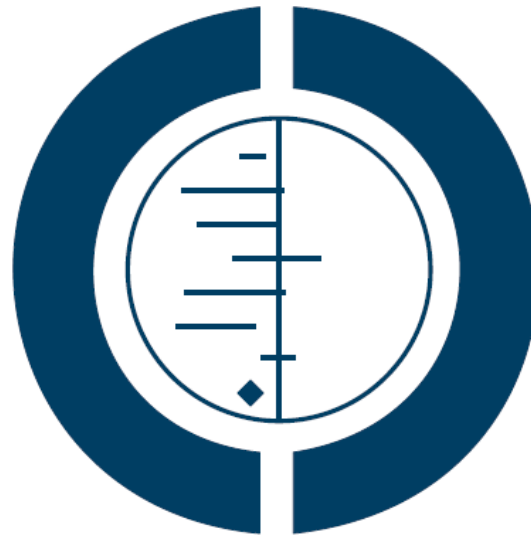
A Department of Health representative told BBC News: "By spotting people who are at risk of heart attacks, diabetes, stroke and kidney disease we can help prevent them. The NHS Health Check programme is based on expert guidance."<sup>1</sup>

"...I have put our original suggestion of systematic health checks on ice. Because it did not have the desired effect."

*Astrid Krag, (now former) Danish Minister of Health<sup>2</sup>*

# Screening for breast cancer with mammography (Review)

Gøtzsche PC, Jørgensen KJ



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# Breast screening should be reassessed

- Mortality benefit likely lower today than in the trials, if it is there
- Overdiagnosis is likely a larger problem today than in the trials



# The Benefits and Harms of Breast Cancer Screening:

## An Independent Review

Authors:

The Independent UK Panel on Breast Cancer Screening



A report jointly commissioned by  
Cancer Research UK and the Department of Health (England).

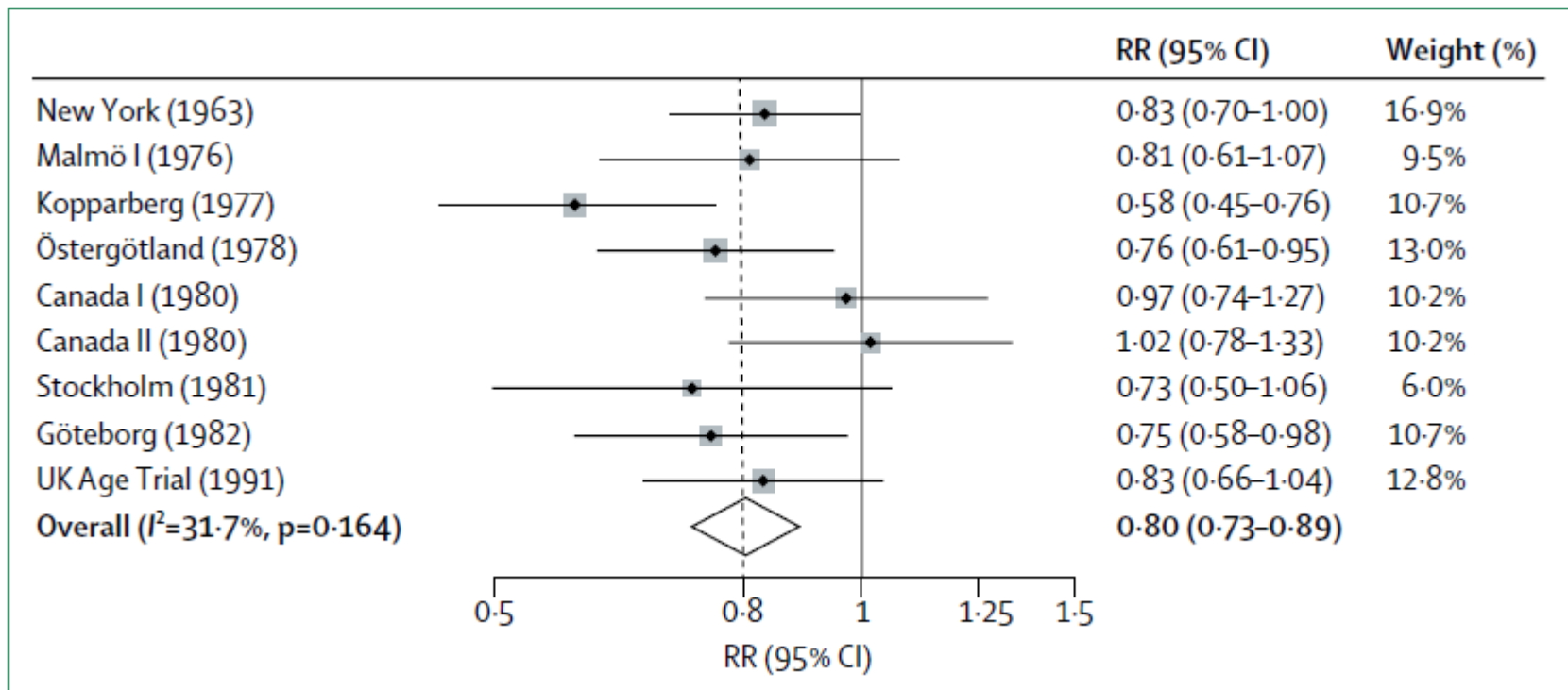
October 2012

# Breast screening should continue

But would the Panel also have recommended to implement breast screening if it did not already exist?

# Main results:

1 woman avoids a breast cancer death for every 3 overdiagnosed; 1 300 and 4 000 women per year, respectively, in the UK.



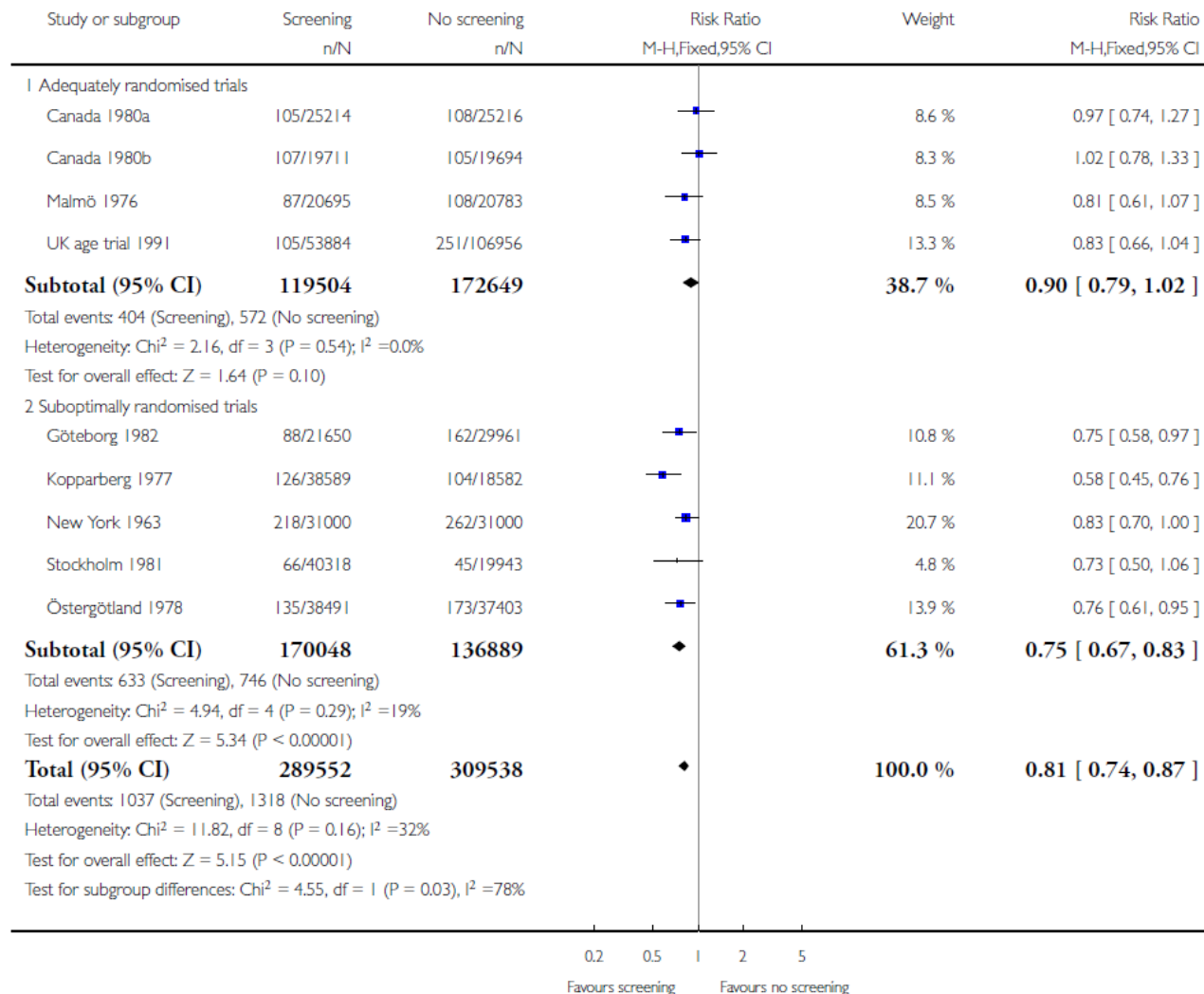
“The Panel’s primary conclusions about breast cancer mortality are based on data reported in the Cochrane review...”

## Analysis 1.2. Comparison 1 Screening with mammography versus no screening, Outcome 2 Deaths ascribed to breast cancer, 13 years follow up.

Review: Screening for breast cancer with mammography

Comparison: 1 Screening with mammography versus no screening

Outcome: 2 Deaths ascribed to breast cancer, 13 years follow up



A	B
100% participation	~80% participation
4-5 rounds	2-4 rounds
2 view	1 view
2 readers	1 reader
Screening every 12 month	Screening every 24-33 month

<b>A</b>	<b>B</b>
100% participation	~70% participation
4-5 rounds	2-4 rounds
2 view	1 view
2 readers	1 reader
Screening every 12 month	Screening every 24-33 month
<b>A finds smaller average size tumors than B</b>	

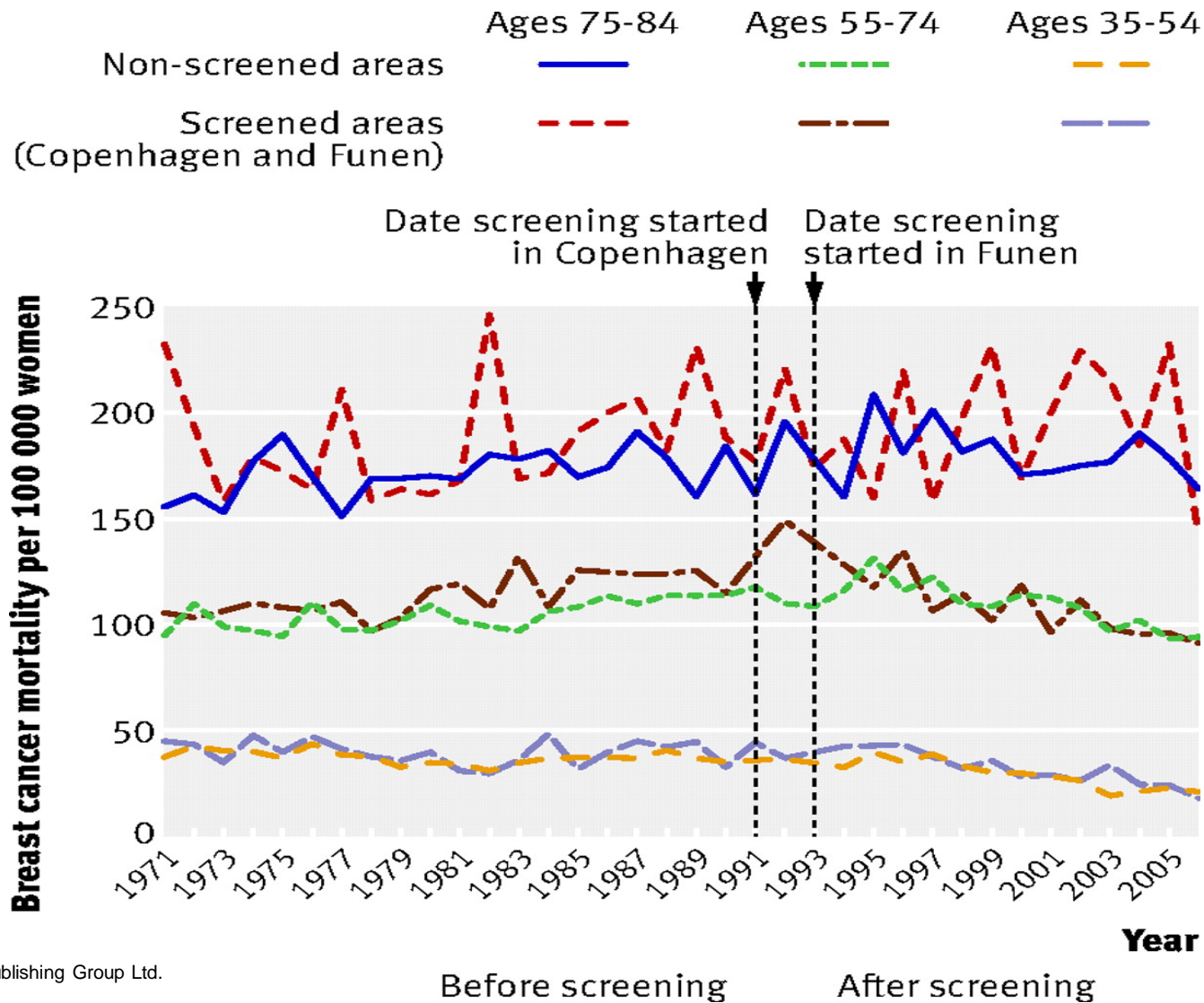
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<b>A finds smaller average size tumors than B</b>	
Individual randomisation	Cluster-randomisation (45)
Presents demographic data	Do not present demographic data
Consistent, transparent reporting	Inconsistent, unclear reporting
Blinded, external cause of death evaluation	No blinded cause of death evaluation



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3% reduction (-26% to +27%)* 2% increase(-22% to + 33%)*	42% reduction (-55% to -3%)* 24% reduction (-39% til -5%)*

\* Thirteen years follow-up

# Breast cancer mortality rates for screened and non-screened areas in Denmark



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# Evidence from current programmes

- **Kalager et al. (NEJM 2010):**  
**10%** (CI: 0.78 to 1.04)  
average 6.6 years of follow-up
- **Olsen et al. (Int J Cancer 2012):**  
**11%** (CI: 0.77 to 1.12)  
"up to 13 years of follow-up"

# Tumour size and breast screening

- Average tumour size in Denmark was reduced from 33 mm in 1978-9 to 24 mm in 1988-9.
- Average size reduction in the trials was 5 mm.

# What can we learn from that?

- The potential for size-reduction was much greater at the time of the trials
- The correlation between prognosis and tumour size at detection does not have a straight-forward explanation
- We need a control group