

Mammography in Women Age 40-50 *Valuable*

Grand Rounds Resident Debate
October 17th, 2011
Lisa Foley, MD

Objectives

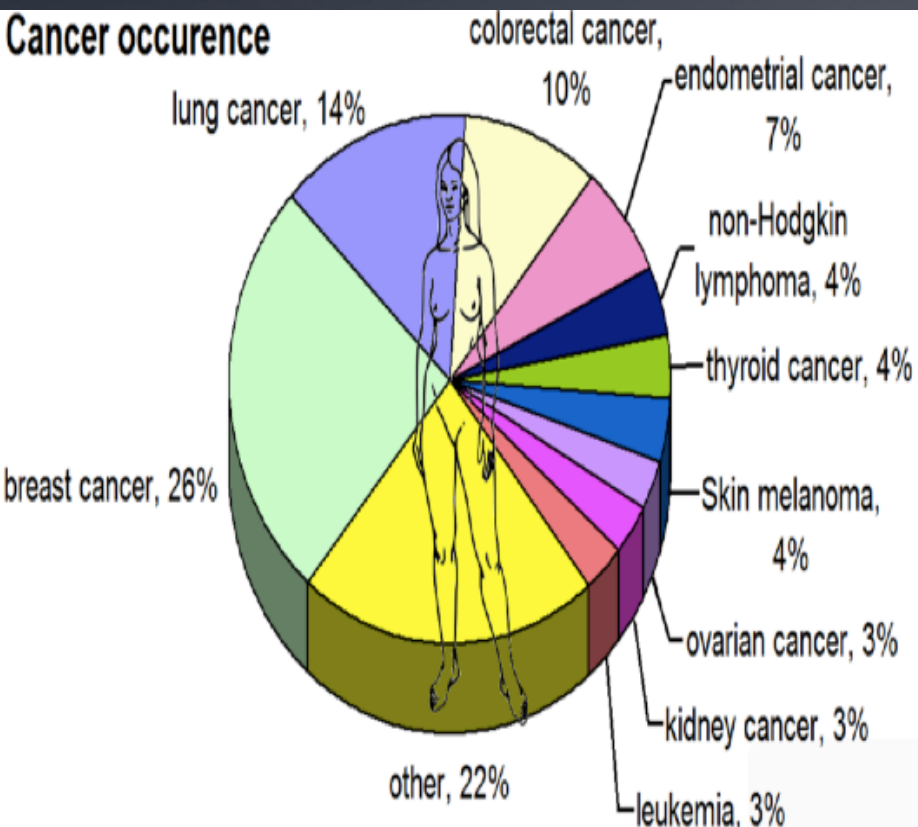
- Background
 - Existing debate
 - Current Recommendations
 - Supporting Evidence
 - Summary
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Breast Cancer

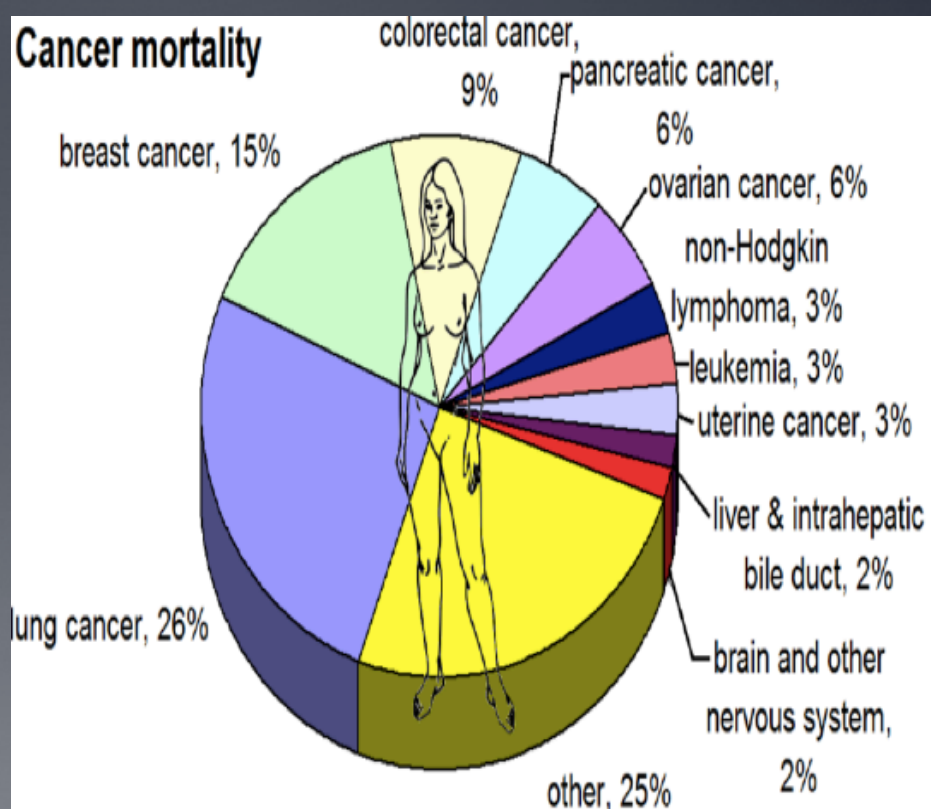
- Lifetime Risk in Women: 12.5%
- 1 in 8 Women afflicted
- 40,460 women die each year in US
- The main cause of death in women ages 45 to 55

Burden of Disease, 2008

Cancer occurrence



Cancer mortality



Most Important Risk Factors

- Age
- Genetic Predisposition
- Hormone Exposure

Screening Modalities

- Imaging
 - Mammography
 - MRI
 - Thermography
 - Breast Palpation
 - Self Breast Exam
 - Clinical Breast Exam
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Debate

- Mammographic screening at age 50
 - shown to have 25% mortality benefit
- Women age 40-50 have less clear benefit
- 40-50, More problems with screening
 - Dense breast tissue
 - Higher false positive screening rate
 - Lower incidence of breast cancer

Current Recommendations

Current Recommendations

- American Cancer Society



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“Yearly mammograms are recommended starting at **age 40** and continuing for as long as a woman is in good health”

Current Recommendations



AMERICAN COLLEGE OF SURGEONS

Press Releases

The American College of Surgeons strongly supports current guidelines that recommend women get a mammogram every year, starting at **age 40**.

Evidence

Evidence

- Screening for Breast Cancer: USPSTF
 - Meta-Analysis; Annals of Internal Medicine, 2009
 - Swedish Mammography Screening in Young Women (SCRY)
 - Cohort; Cancer 2011
 - Age Trial
 - RCT; Lancet 2006
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USPSTF, 2009

Annals of Internal Medicine

CLINICAL GUIDELINES

Screening for Breast Cancer: An Update for the U.S. Preventive Services Task Force

Heidi D. Nelson, MD, MPH; Kari Tyne, MD; Arpana Naik, MD; Christina Bougatsos, BS; Benjamin K. Chan, MS; and Linda Humphrey, MD, MPH

USPSTF, 2009

- Meta-Analysis
 - Cochrane Central Register of Controlled Trials
 - Cochrane Database of Systematic Reviews (through the fourth quarter of 2008)
 - MEDLINE (1 January 2001 to 1 December 2008)
-

USPSTF, 2009

- Included RCTs & Meta-Analyses with mortality data
 - Breast Cancer Mortality primary outcome
 - Fair or Good RCTs included
-

USPSTF, 2009

- Identified 8 RCTs
 - Data for 600,830 women age 40+
 - stratified by decade
 - Routine Screening defined as 1 mammo in 2 years
 - Positive mammography defined by BI-RADS
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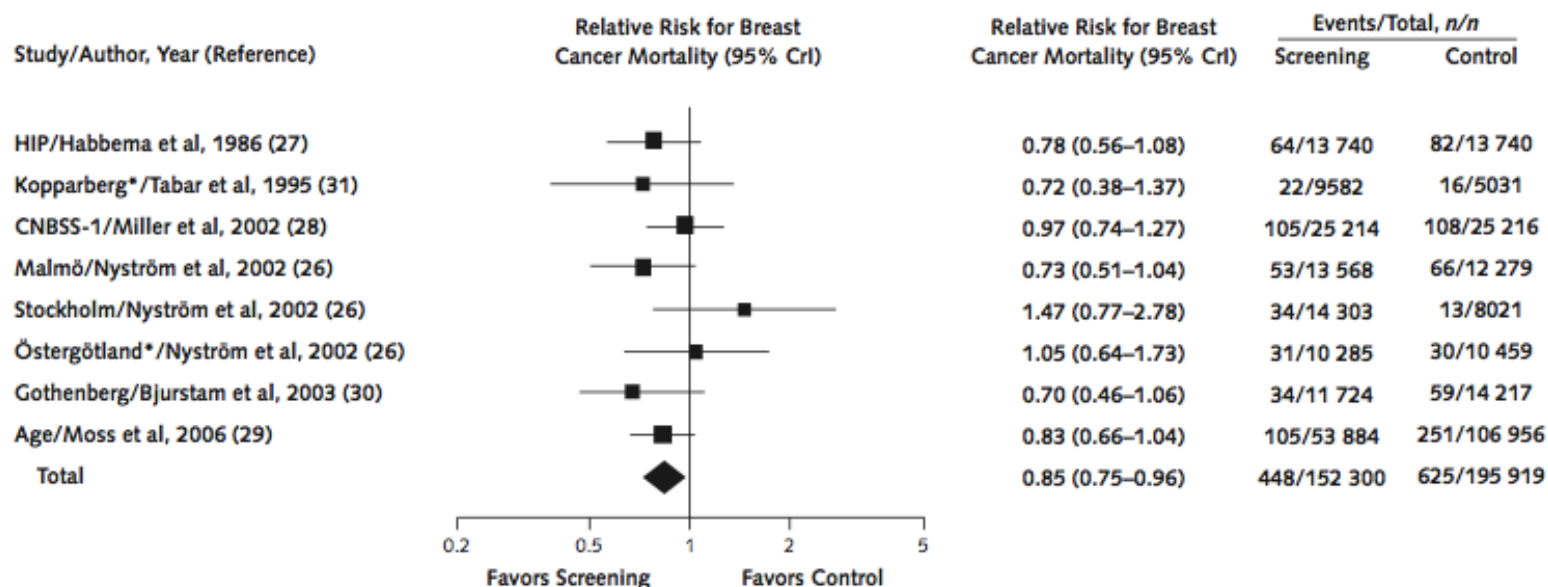
USPSTF, 2009

Pooled RR for breast cancer mortality in screened pts:

- 39-49 0.85 (95% CI 0.75-0.96)
 - 50-59 0.86 (0.75-0.99)
 - 60-69 0.68 (0.54-0.87)
-

USPSTF, 2009

Figure. Pooled relative risk for breast cancer mortality from mammography screening trials compared with control for women aged 39 to 49 years.

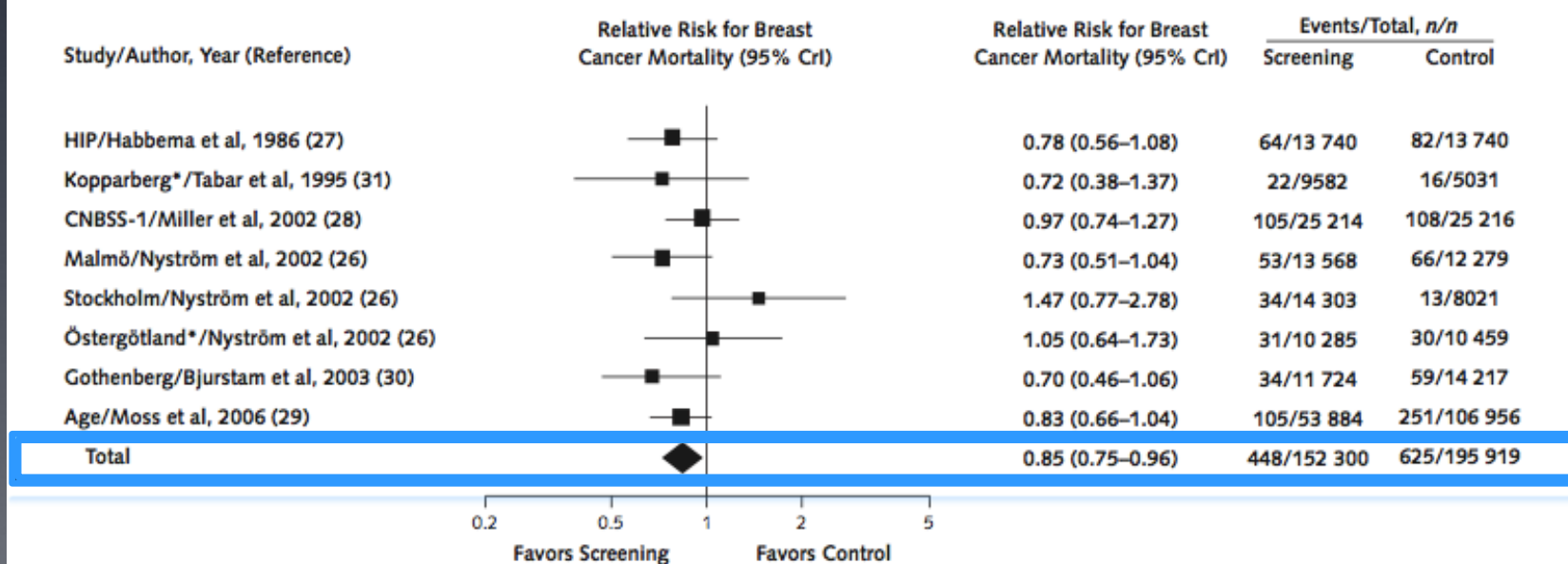


CNBSS-1 = Canadian National Breast Screening Study-1; CrI = credible interval; HIP = Health Insurance Plan of Greater New York.

* Swedish Two-County trial.

USPSTF, 2009

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USPSTF, 2009

Mammography screening reduces breast cancer mortality by 15% for women aged 39 to 49 years (relative risk, 0.85 [95% credible interval, 0.75 to 0.96]; 8 trials).

USPSTF

- Radiation exposure from mammography is low.
 - Patient adverse experiences are common and transient and do not affect screening practices.
 - Younger women have more false-positive mammography results and additional imaging but fewer biopsies than older women.
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Swedish Studies

Cancer



Effectiveness of Population-Based Service Screening With Mammography for Women Ages 40 to 49 Years

Evaluation of the Swedish Mammography Screening in Young Women (SCRY) Cohort

Barbro Numan Hellquist, MSc¹; Stephen W. Duffy, MSc²; Shahin Abdsaleh, MD, PhD³; Lena Björneld, RN⁴; Pál Bordás, MD⁵; László Tabár, MD, PhD⁶; Bedrich Viták, MD, PhD⁷; Sophia Zackrisson, MD, PhD⁸; Lennarth Nyström, PhD⁹; and Håkan Jonsson, PhD¹

Swedish Studies

- 1974 – Gavleborg starts screening
 - 1976 and 1983, RCTs on mammography screening were initiated in the cities of Stockholm, Malmo, and Gothenburg (the WE trial)
 - 1986 NBH issued their guidelines recommending that the county councils invite women ages 40 to 54 years to screening every 18 months and women ages 55 to 74 years every second year
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Swedish Studies

- In 1987 - guidelines were modified
 - in case of a lack of resources, county councils should focus on the group ages 50 to 74 years.
- Consequently, 50% of the Swedish counties invited women aged 40 years, and the remaining counties invited women aged 50 years.

Swedish Studies



Figure 1. This is a simplified map of the areas that were included in the study group and the control group.

Swedish Studies

- Breast cancer death / person-years
 - 40 to 44 years - RR estimates were 0.83 (95% CI, 0.70-1.00)
 - 45 to 49 years, the RR estimates were 0.68 (95% CI, 0.59-0.78)
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Swedish Studies

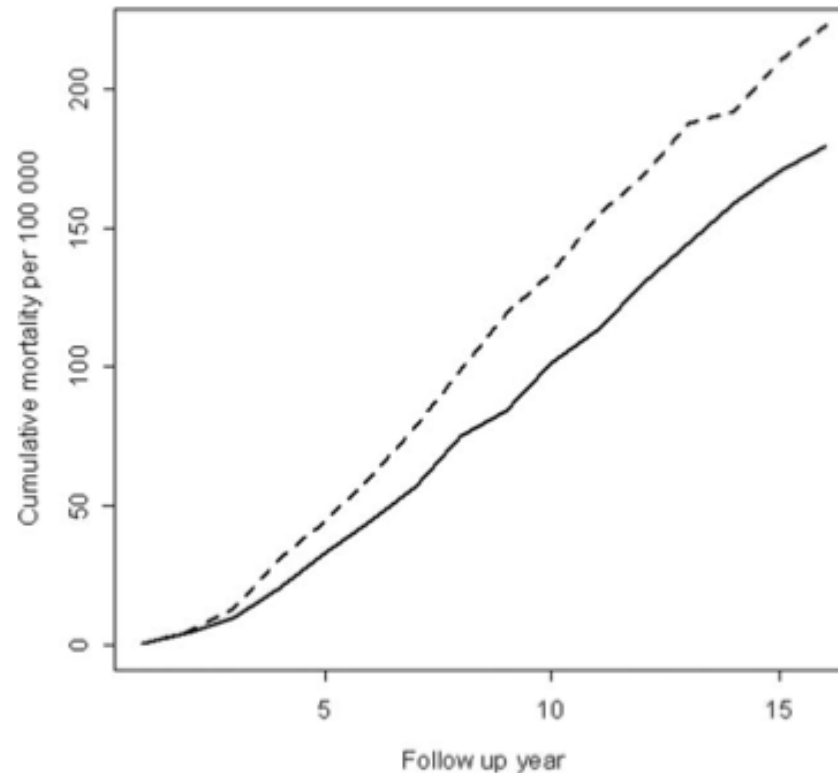


Figure 2. This chart illustrates the crude cumulative breast cancer mortality per 100,000 person-years. Solid line indicates the study group; dashed line, control group.

Age Trial

THE LANCET

Volume 368, Issue 9552, 9-15 December 2006, Pages 2053-2060

Effect of mammographic screening from age 40 years on breast cancer mortality at 10 years' follow-up: a randomised controlled trial

*Sue M Moss, Howard Cuckle, Andy Evans, Louise Johns, Michael Waller, Lynda Bobrow, for the Trial Management Group**

Age Trial

- Randomized Control Trial
 - Effect on Mortality of Annual Screening at Age 40
-

Age Trial

- 160,921 women age 39-41 randomized; 1991-1997
 - 23 Centers- England, Wales, Scotland
 - Intention-to-treat principle
 - 10 year follow-up
-

Age Trial

	Number of women	Women years	All cause deaths		Breast cancer deaths		Rate ratio (95% CI) intervention vs control group
			n	Rate per 1000 women years	n	Rate per 1000 women years	
Intervention	53 884	578 390	960	1.66	105	0.18	0.83 (0.66 – 1.04)
Control	106 956	1 149 380	1975	1.72	251	0.22	

Table 2: Mortality from all causes and from breast cancer in the intervention and control groups

Age Trial

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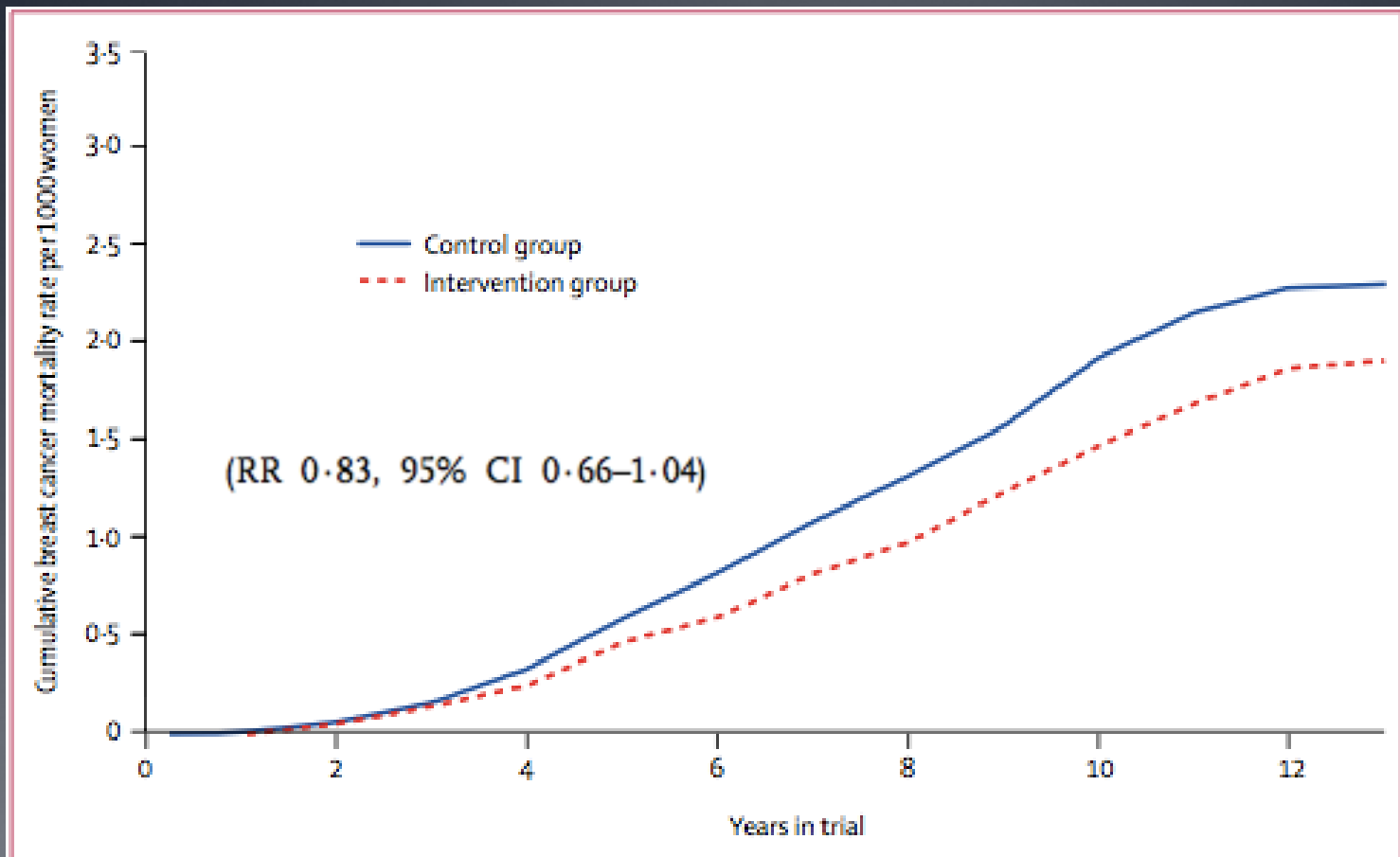


Figure 2: Cumulative breast cancer mortality

Summary

Summary



What should I recommend to my patients?

Summary

- The introduction and widespread use of mammography for the early detection of breast cancer is one of the most important recent achievements in the control of cancer.

Robert A. Smith, PhD; ACS

Thank You