



X-Ray Associates of New Mexico, P.C.

THE ARGUMENT FOR SCREENING MAMMOGRAPHY

MICHAEL N. LINVER, MD, FACR

A Disease Breaks Free

Breast cancer is on the rise. Big countries

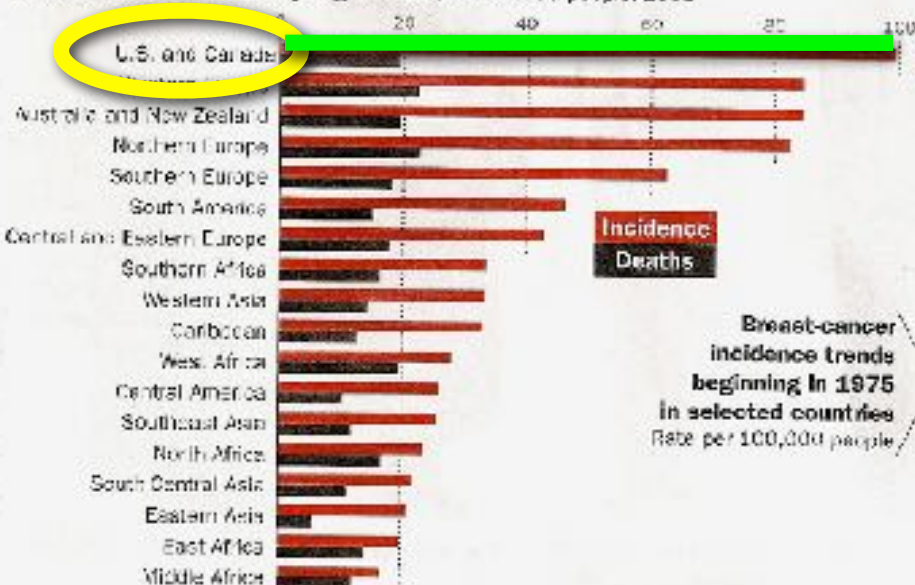
THE OTHER PANDEMIC:

Breast cancer is on the rise. Big countries

The map shows breast-cancer incidence by country
Rate per 100,000 people, 2002



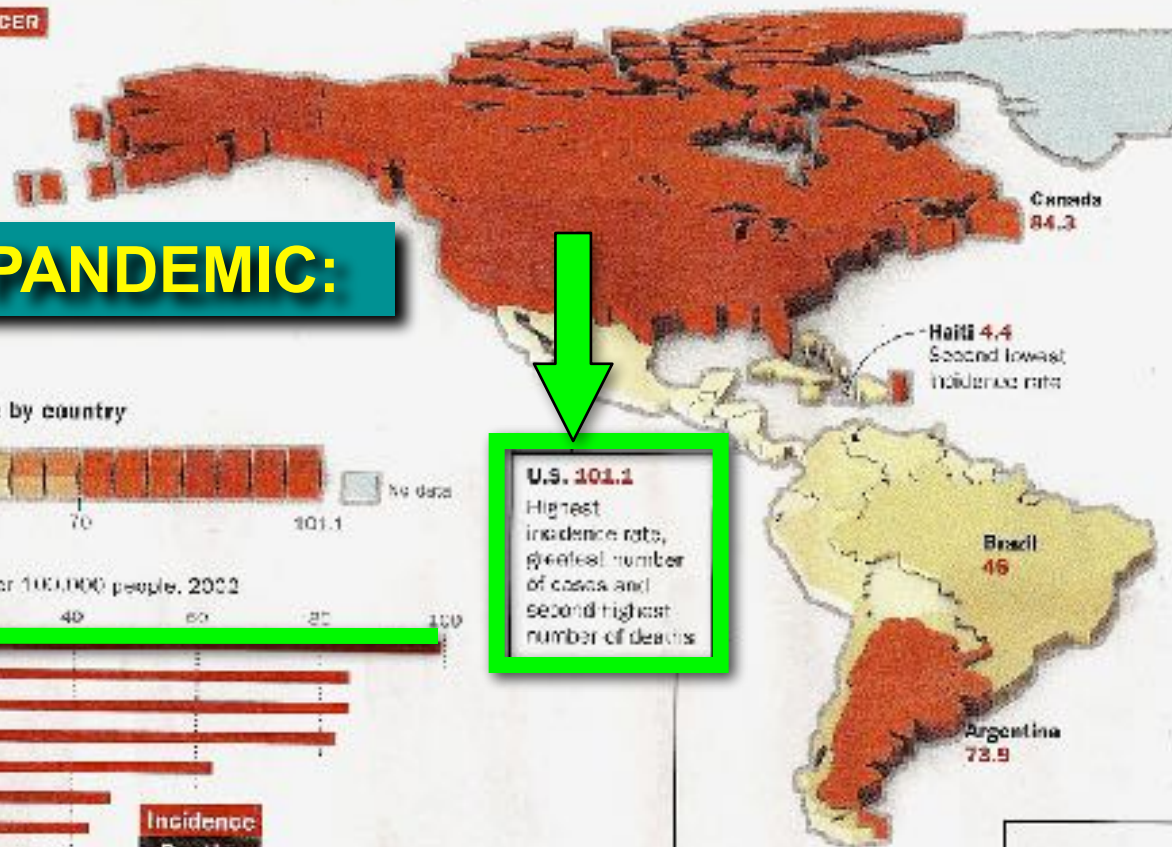
Reported breast cancer by region, rate per 100,000 people, 2002

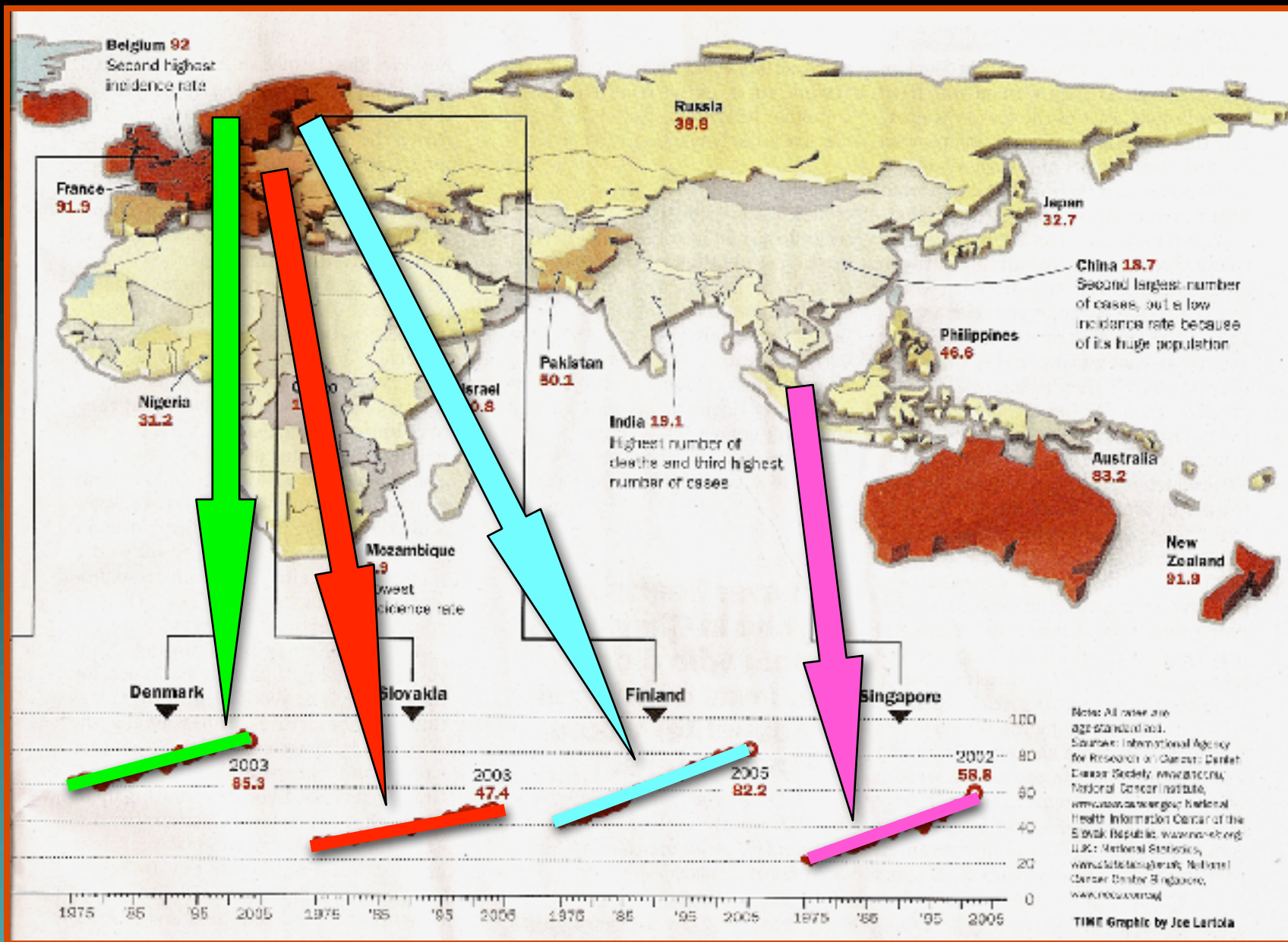


Breast-cancer incidence trends beginning in 1975 in selected countries
Rate per 100,000 people

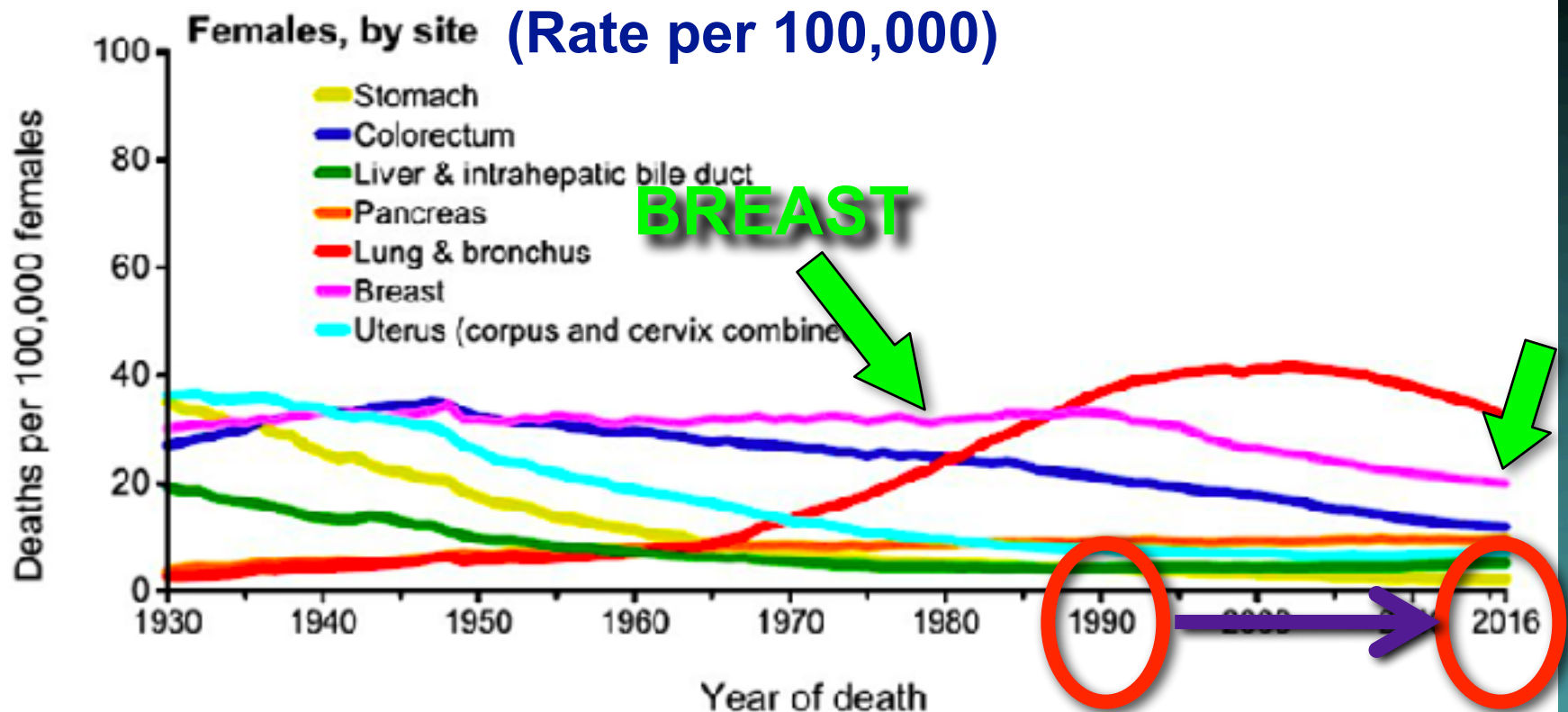


^aThe value shown on the map (101.1) differs from the value shown in the chart because different methods were used to calculate the values. The map value is an estimate for the entire U.S., while the chart value is based on nationwide registry data.

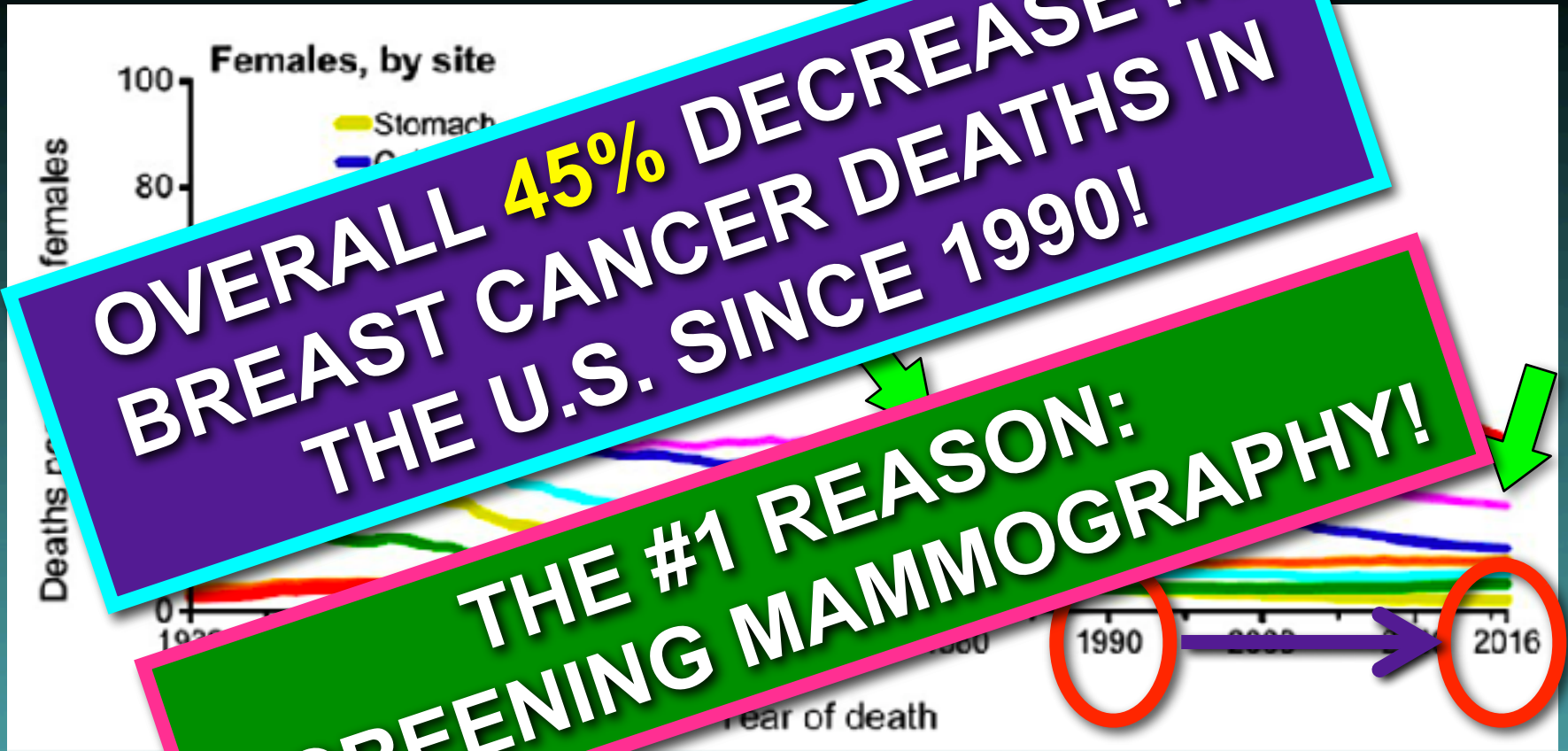




Cancer Death Rates for U.S. Women, 1930-2016



Cancer Death Rates for U.S. Women, 1930-2016



GUIDELINES FOR SCREENING MAMMOGRAPHY:

**WHO SHOULD BE SCREENED,
AND HOW OFTEN?**

SO WHAT IS THE PROBLEM?

**CONFLICTING AND
CONTROVERSIAL DATA AND
GUIDELINES!**



IN THE UNITED STATES:

	ACR/SBI	ACS	ACOG	AMA	ASBrS	NCCN	USPSTF
Age (yrs) to Start Mammography	40*	45 Option to start at age 40	Offer at 40, not later than 50	40	40	40	50
Age to Stop Mammography	No age limit; tailor to individual health status	When life expectancy is < 10 years	Age 75, then shared decision making	Not stated	When life expectancy is < 10 years	Upper age limit for screening is not yet established	74 years
Mammography Interval	Annual	Annual 45-54; Every 1 or 2 years 55 and older	Every 1 or 2 years	Annual	Annual	Annual	Every 2 years
©DaseelBreastInfo.org Rev. April 2020							

* Black, Hispanic, and Asian women have peak incidence of breast cancer in their 40s and should begin screening at least by age 40.*

* Monticciolo DL, Newell MS, Moy L, Niell B, Monsees B, Sickles EA. Breast Cancer Screening in Women at Higher-Than-Average Risk: Recommendations from the ACR. *J Am Coll Radiol* 2018; 15:408-414;

* Stapleton SM, Oseri TO, Bababekov YJ, Hung Y, Chang DC. Race/Ethnicity and Age Distribution of Breast Cancer Diagnosis in the United States

**CONFUSION = LOSS OF
CONFIDENCE BY LAY U.S. PUBLIC**





ACR/SBI RECOMMENDED SCREENING GUIDELINES, 2020

- **WOMEN OF AVERAGE RISK:**
 - **Begin mammography at age 40 (yearly)**
 - **BSE performed regularly**

GUIDELINES OF THE US PREVENTIVE SERVICES TASK FORCE

(NOVEMBER 16, 2009)

- **NO MAMMOGRAPHY RECOMMENDED FOR:**
 - **Women ages 40-49**
 - **Women over age 74**
- **MAMMOGRAPHY NOW RECOMMENDED EVERY TWO YEARS FOR:**
 - **Women ages 50-74**
- **NO BREAST SELF-EXAMINATION**
- **NO CLINICAL BREAST EXAMINATION**



GUIDELINES OF THE US PREVENTIVE SERVICES TASK FORCE (NOVEMBER 16, 2009)

- **NO** MAMMOGRAPHY RECOMMENDED

- Women ages 40-49

- Women over 50

- MAMMOGRAPHY RECOMMENDED

OVERRULED BY U.S. CONGRESS
(WENT BACK TO 2002 GUIDELINES:
SCREENING YEARLY AT 40)

- **CLINICAL BREAST SELF-EXAMINATION**

- **NO** CLINICAL BREAST EXAMINATION



FINAL GUIDELINES OF THE US PREVENTIVE SERVICES TASK FORCE (JANUARY 11, 2016)

- **NO** MAMMOGRAPHY RECOMMENDED FOR:
 - Women ages 40-49
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FINAL GUIDELINES OF THE US PREVENTIVE SERVICES TASK FORCE (JANUARY 11, 2016)

- **NO** MAMMOGRAPHY RECOMMENDATION FOR:

→ Women ages 40-49

→ Women 50 and older

**DO THESE GUIDELINES LOOK
FAMILIAR?**

**AND DO THEY MAKE ANY
SENSE?**

- **NO** SELF-EXAMINATION

- **NO** CLINICAL BREAST EXAMINATION



FIRST, A LITTLE BACKGROUND:
**WHAT IS THE SCIENTIFIC
PROOF THAT MAMMOGRAPHY
DECREASES BREAST CANCER
DEATHS?**

**(ONE OF THE GREATEST
MEDICAL ACHIEVEMENTS
OF THE 20TH CENTURY!)**





EVIDENCE DEMONSTRATING BENEFIT TO SCREENING

- Randomized controlled trials (RTC)
- **Observational trials (organized programs)**
- Surrogate data
- **Modeling (NCI CISNET)**



DIRECT PROOF OF BENEFIT=

RANDOMIZED CONTROLLED TRIALS (RCT'S)= the Gold Standard

- Compare **mortality** of study group with control group
- Mortality rate of control group = 1
- **Proof of benefit** = relative risk (RR) < 1 , and is statistically significant at 95% confidence interval (CI)
(**Actual benefit** always greater, since study group includes non-attenders)



DIRECT PROOF OF BENEFIT=

- **National or provincial ORGANIZED SCREENING PROGRAMS:**
- **Although not randomized or controlled, they offer valuable comparisons in breast cancer mortality between large numbers of women who are screened vs. those who are not screened**
- ➔ **These are in place in over 20 countries: Sweden, Holland, Australia, Norway, UK, British Columbia, Nova Scotia, etc.**



INDIRECT PROOF OF BENEFIT

- **Measure Surrogate End Points (non-controlled)**
 - **Small tumor size and lack of axillary lymph node involvement**



INDIRECT PROOF OF BENEFIT

- **Modeling (NCI CISNET)**
 - **Cancer Intervent. & Surveillance Modeling Network (CISNET) of the National Cancer Institute, commissioned by USPSTF**



DIRECT PROOF OF BENEFIT=

**RANDOMIZED CONTROLLED
TRIALS (RCT'S)= the Gold Standard**

RANDOMIZED CONTROLLED TRIALS: SUMMARY

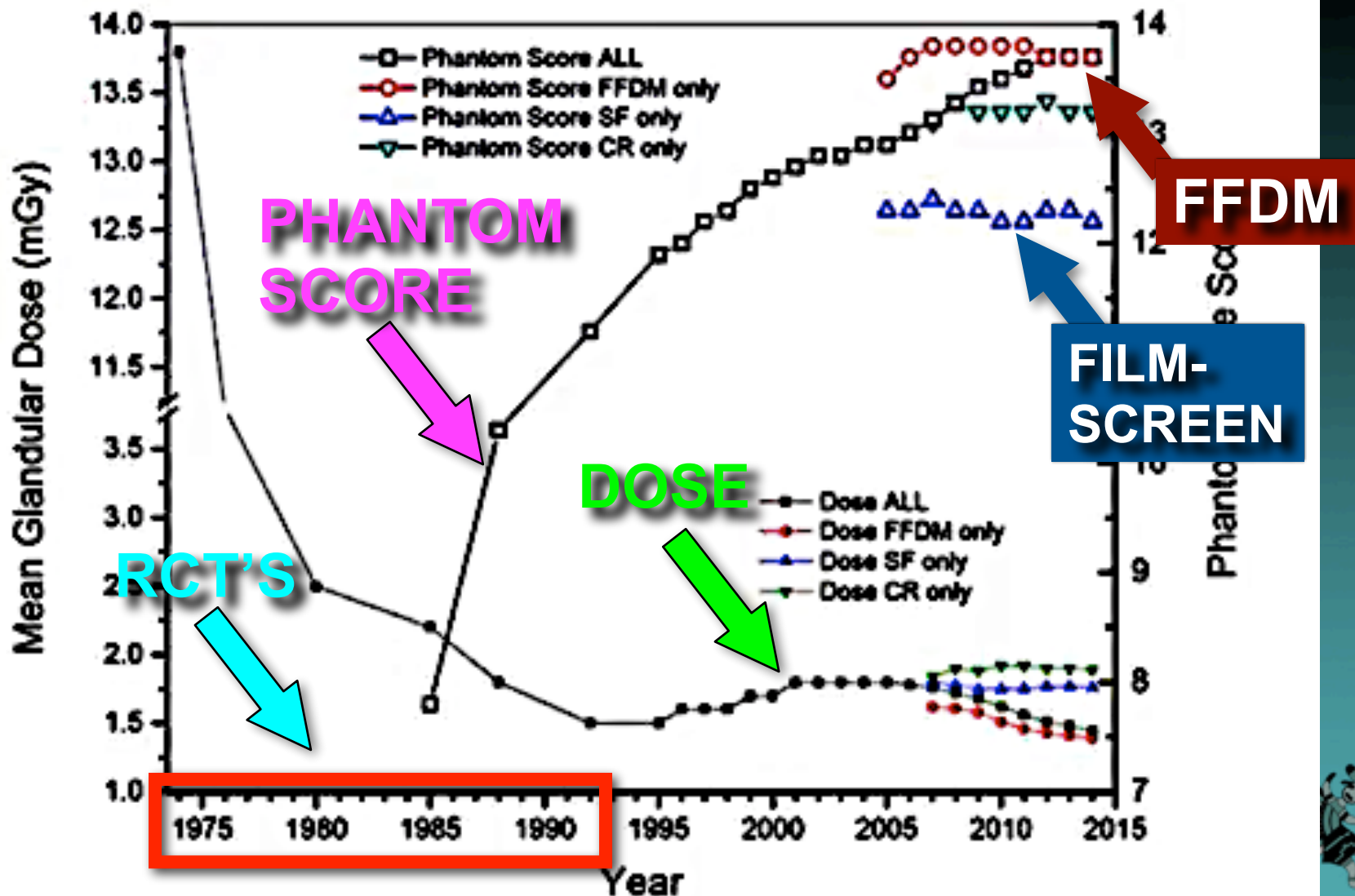
TRIAL	AGES	DESIGN	WOMEN
HIP 1965	40-64	2 View + CBE	61,004
MALMO 1977	45-69	1 or 2 View	42,283
KOPPARBERG 1977	40-74	1 View	57,040
OSTERGOTLAND 1977	40-74	1 View	75,550
EDINBURGH 1978	45-64	1 or 2 View	54,654
CNBSS 1980	40-49	2 View + CBE	50,430
CNBSS 1980	50-59	2 View + CBE	39,405
STOCKHOLM 1981	40-64	1 View	60,261
GOTHENBURG 1982	40-59	2 View	51,611
AGE 1991	39+41	1 View	160,840*

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**NO RCT'S DONE IN THE AGE
OF DIGITAL MAMMOGRAPHY!**

PHANTOM IMAGE SCORES VS. DOSE, 1975-2015



**EVEN IN THE FACE OF LESSER
QUALITY MAMMOGRAPHY, THE
RANDOMIZED CONTROLLED
TRIALS OF 1965 TO 1991 ALL**
SHOWED SCREENING
MAMMOGRAPHY TO
DRAMATICALLY DECREASE
BREAST CANCER DEATHS:**

**** - THERE WAS ONE EXCEPTION, THE
CANADIAN “NATIONAL” TRIAL OF 1980-87**



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HEALTH INSURANCE PLAN (HIP) OF GREATER NEW YORK STUDY (1963-68)

- Randomized controlled trial
- 62,000 women age 40-64 on entry
- 31,000 each in study and control groups
- Study group offered mammography and breast physical exam annually for 4 years
- Attendance of study group first 4 screens
→ 67% 54% 50% 46%



THE EVIDENCE FOR SCREENING

- **HIP trial = 1963 - 1969**
 - Demonstrated statistically significant overall decrease in mortality of 30%

Cumulative Number Of Deaths

For Women 50 To 64 Years Old At Entry Into HIP Study



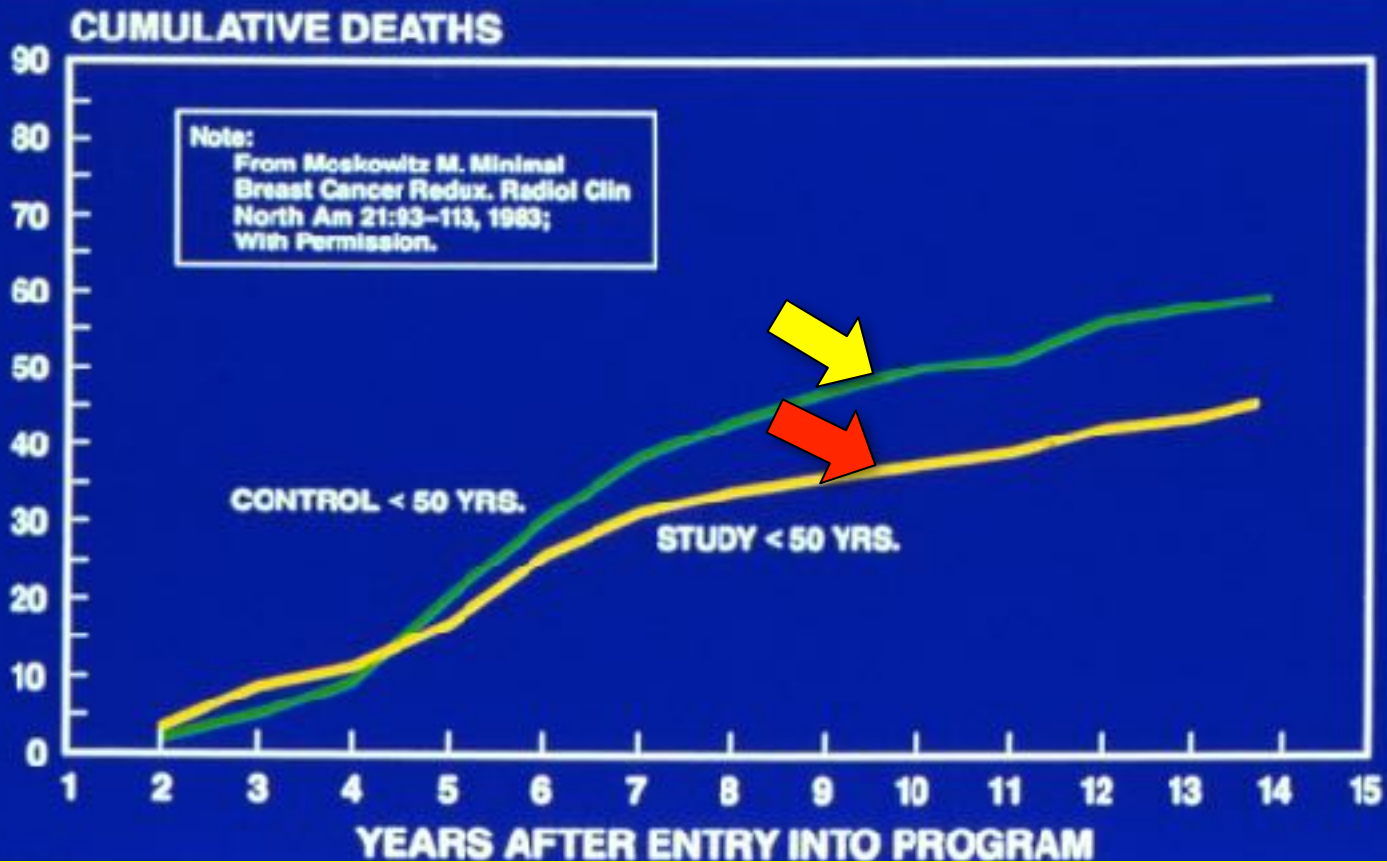


THE EVIDENCE FOR SCREENING

- **HIP trial = 1963 - 1969**
 - Demonstrated statistically significant overall decrease in mortality of 30%
 - If break out 40 - 49 group (not intended in design of HIP), is 23% benefit, but not statistically significant

Cumulative Number Of Deaths

For Women 40 To 49 Years Old At Entry Into HIP Study





THE SWEDISH TRIALS: 1976 - 1988

- 5 randomized controlled trials
- Driven by public demand in Sweden
- 2-county trial: published 1985
 - **31%** overall decrease in mortality,
statistically significant
- All 5 trials showed overall benefit

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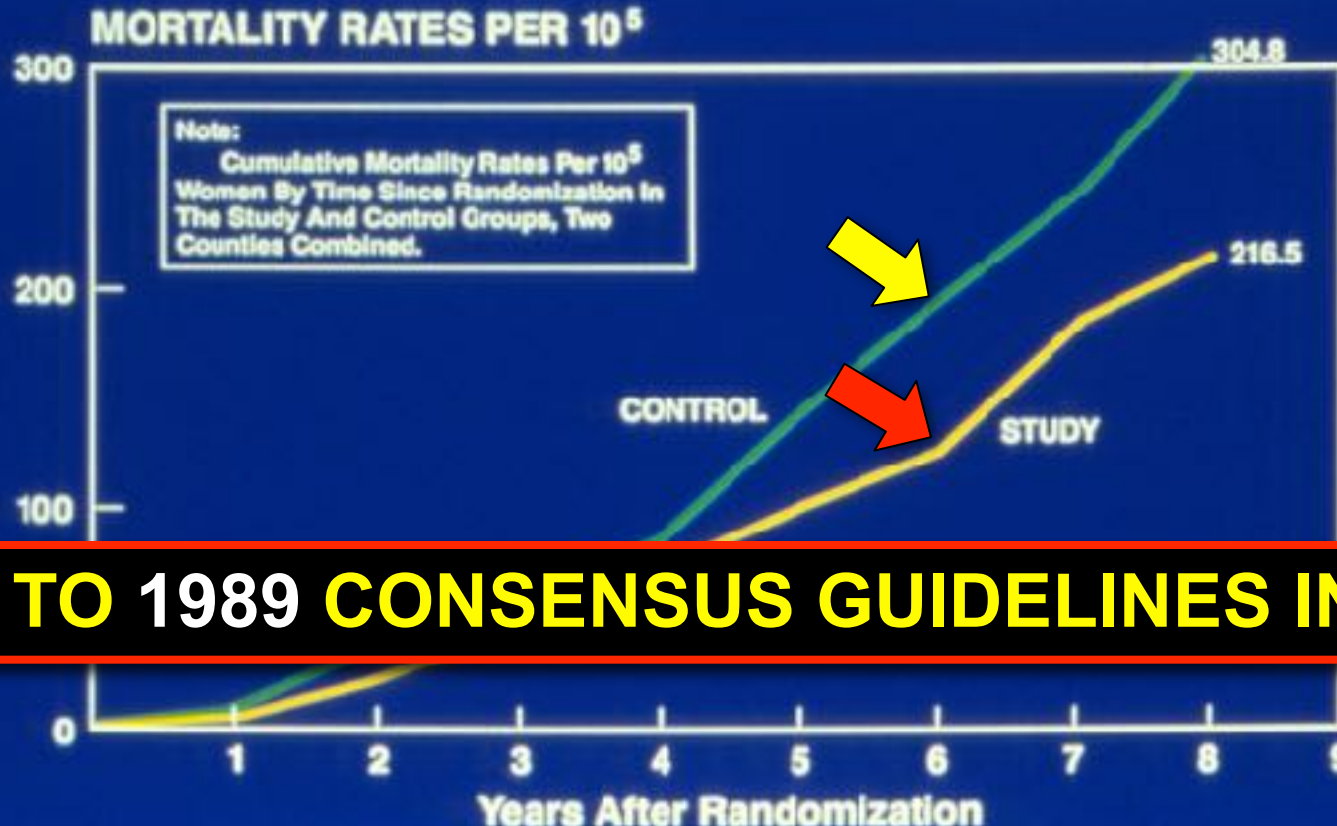


LASZLO TABAR



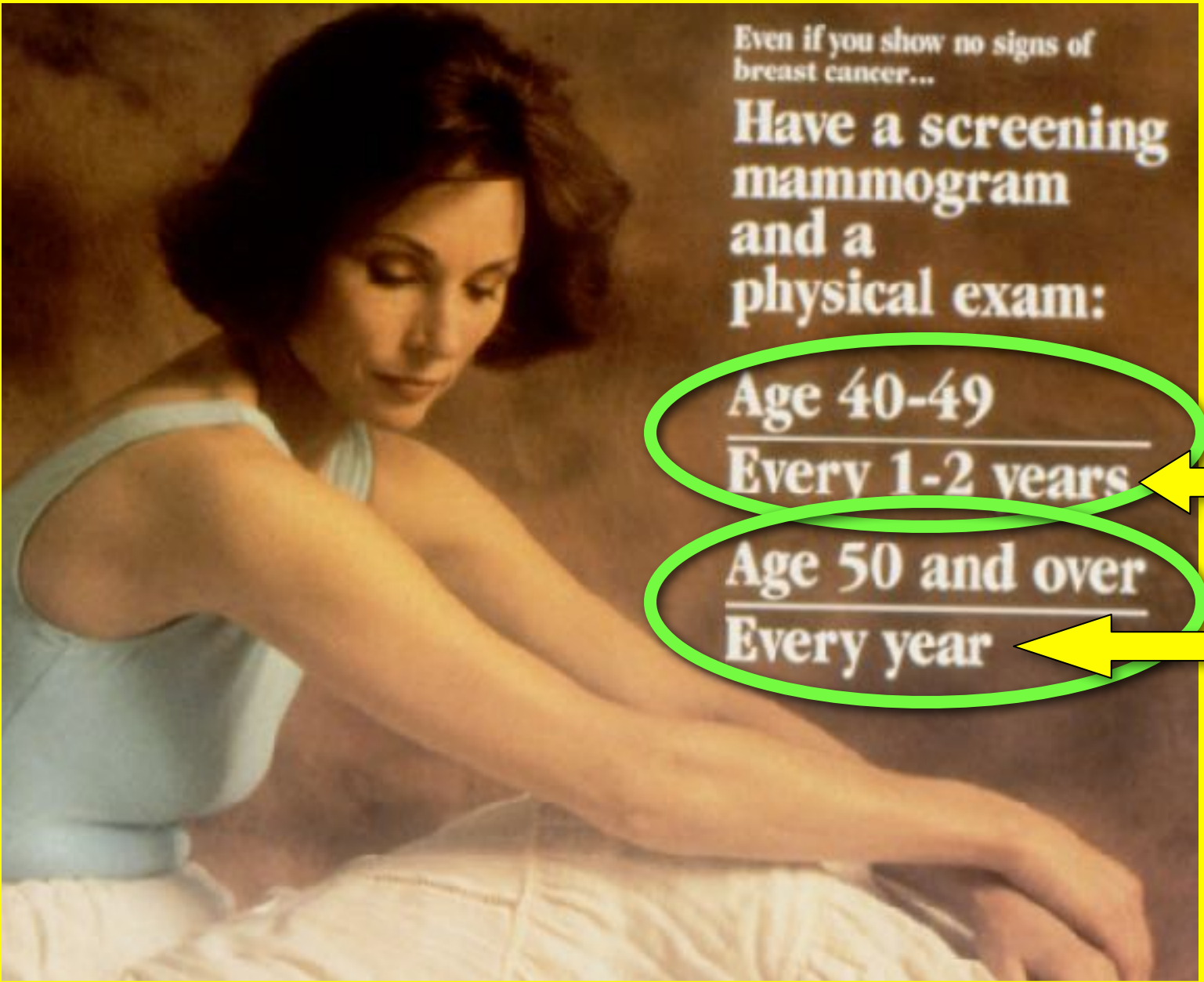
Cumulative Mortality Rates

Per 10⁵ Women Aged 40 To 74 At Entry (Swedish Study)



LED TO 1989 CONSENSUS GUIDELINES IN U.S.





Even if you show no signs of
breast cancer...

**Have a screening
mammogram
and a
physical exam:**

Age 40-49

Every 1-2 years

Age 50 and over

Every year



**THE CANADIAN
NATIONAL BREAST
CANCER
SCREENING STUDY:
1992
(CNBSS)**





THE CNBSS RCT'S = 1992

- #1 (ages 40 - 49) and #2 (ages 50 - 59) = both showed **no benefit** to screening!
- Led to considerable controversy
- Methodology badly flawed, leading to fallacious results, & condemnation by experts



THE CNBSS RCT'S = 1992

- Despite flaws and condemnation, these were the **ONLY** RCT's that the Task Force decided to use in their decision making process!!
- They refused to look at all the other RTC's, which all showed dramatic drops in breast cancer mortality in the study groups!!!

CNBSS = PROBLEMS

- Not population-based = accepted volunteers
- Both study and control groups **pre-screened with CBE**
- Pre-screening done **prior to randomization**
 - **4x** number of advanced cancers found in study group
- Quality of mammograms and interpretations
 - Both questioned by reference radiologists

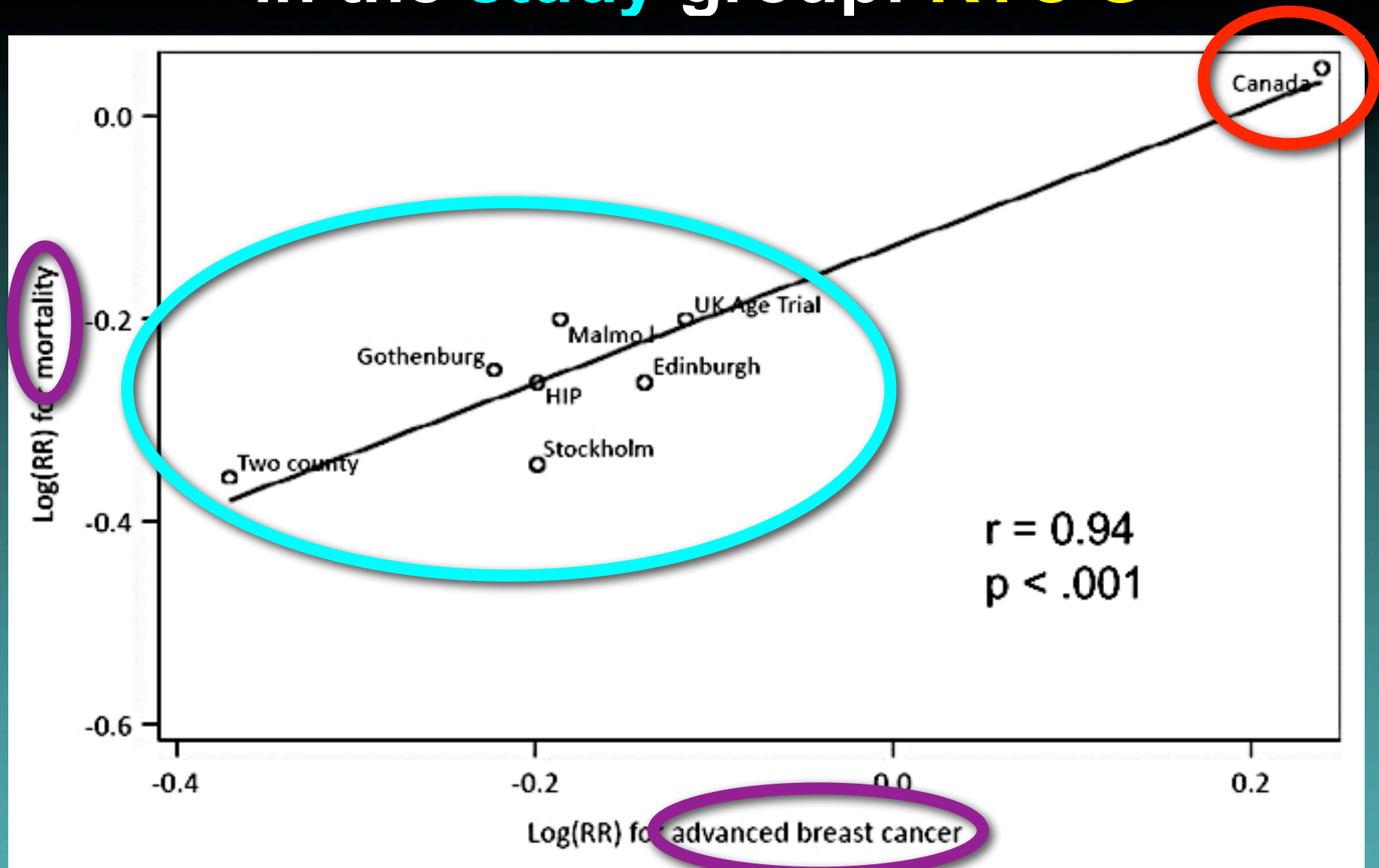


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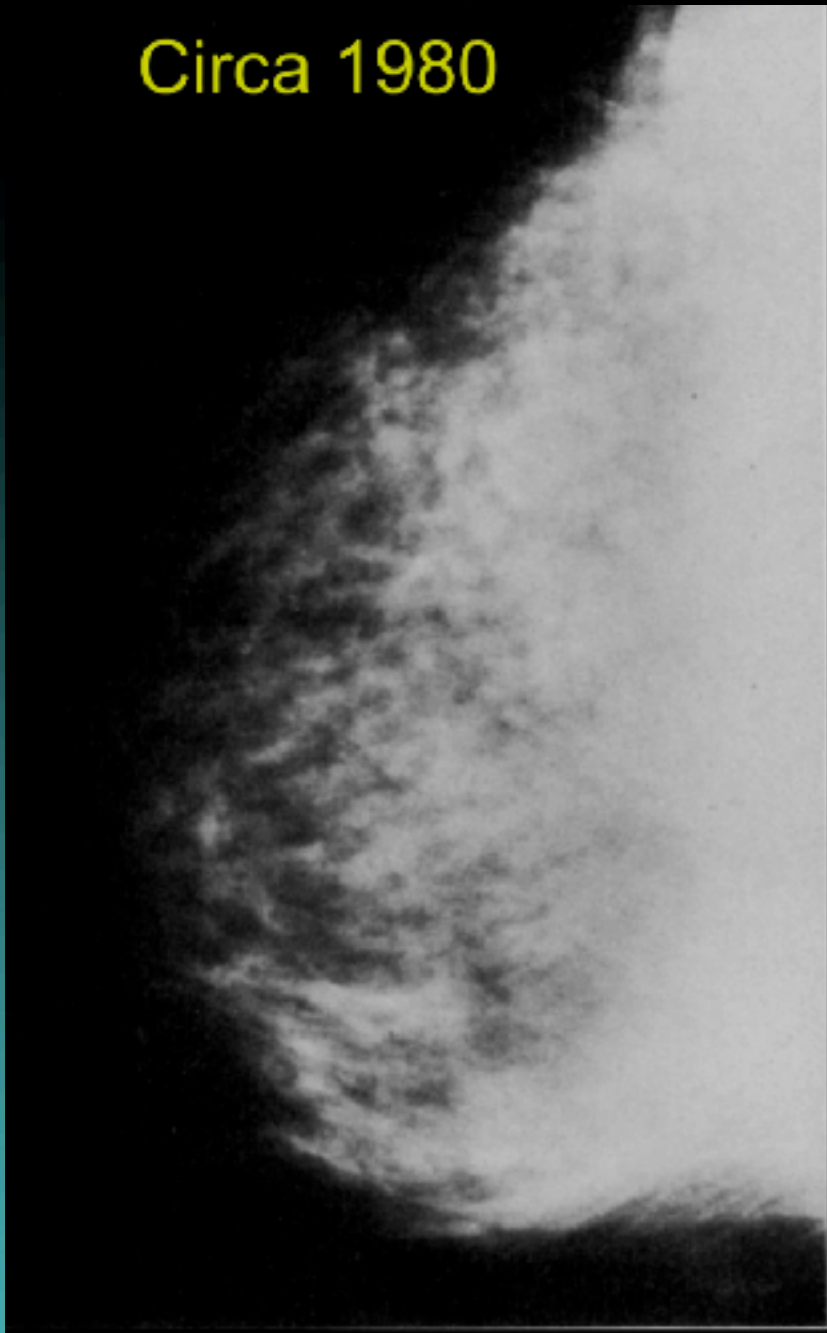
ADVANCED CANCER FREQUENCY in the study group: RTC'S



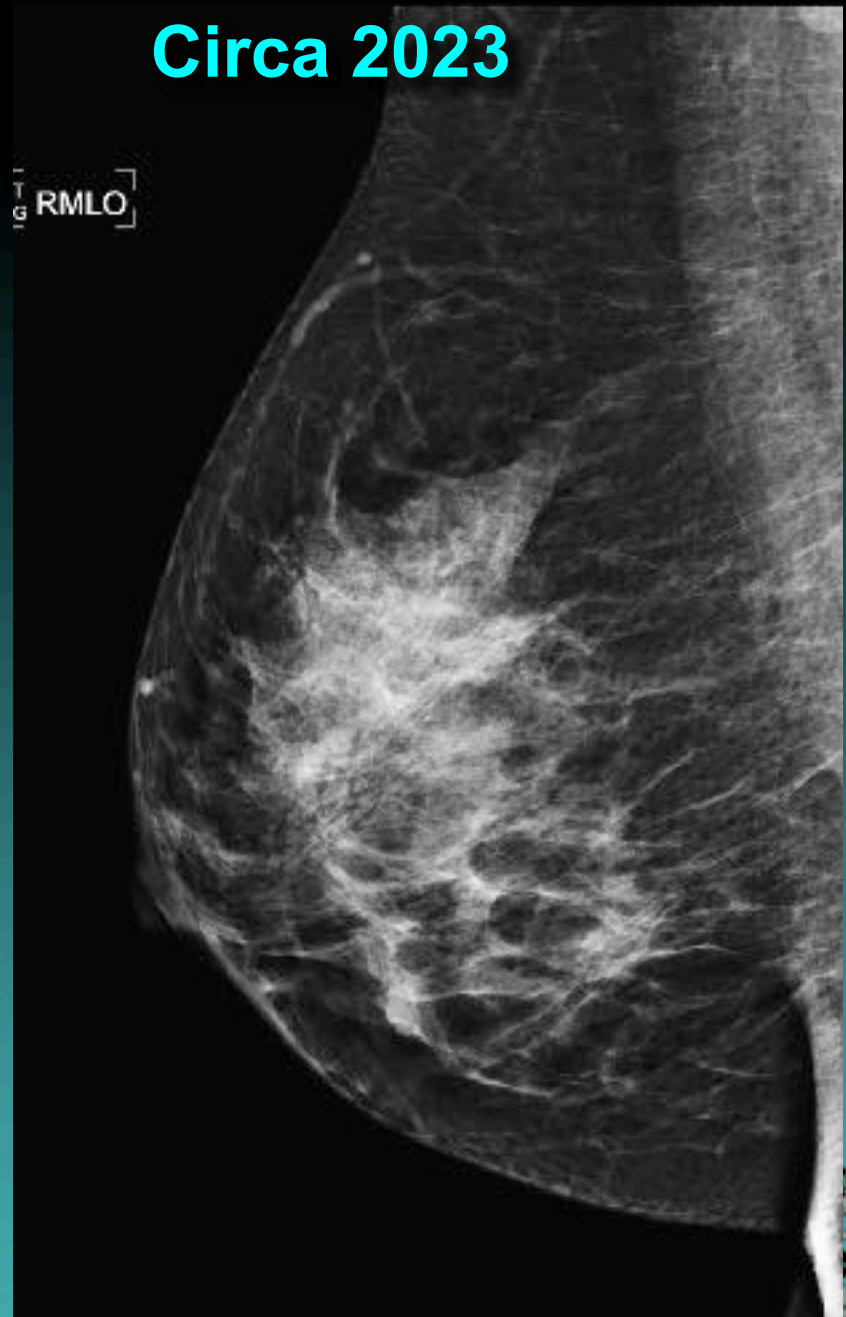
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- Quality of mammograms and interpretations
 - ➔ Both questioned by reference radiologists

Circa 1980



Circa 2023



RECENT ARTICLES DOCUMENTING THE SERIOUS PROBLEMS WITH THE CNBSS (“CANADIAN”) SCREENING TRIAL

Errors in Conduct of the CNBSS Trials of Breast Cancer Screening Observed by Research Personnel

Jean M. Seely, MD, FRCPC, FSBI, FCAR,^{1,2,*} Peter R. Eby, MD, FACR, FSBI,³ Paula B. Gordon, MD, FRCPC, FSBI,⁴ Shushiela Appavoo, MD, FRCPC,⁵ Martin J. Yaffe PhD, FSBI⁶

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Original Research

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Published Online: March 29, 2022



Science of Screening

The Fundamental Flaws of the CNBSS Trials: A Scientific Review

Jean M. Seely, MD,^{1,*} Peter R. Eby, MD,^{2,3} Martin J. Yaffe, PhD⁴

¹University of Ottawa, Department of Medical Imaging, The Ottawa Hospital, Ottawa, Ontario, Canada; ²Virginia Mason Medical Center, Department of Radiology, Seattle, WA, USA; ³University of Washington School of Medicine, Department of Radiology, Seattle, WA, USA; ⁴University of Toronto Physical Sciences Platform, Department of Medical Biophysics, Sunnybrook Research Institute Sunnybrook Hospital, Toronto, Ontario, Canada

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Editorial

Problems With the Canadian National Breast Screening Studies

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Keywords: mammography; screening; trials



RANDOMIZED CONTROLLED TRIALS:

TRIAL	RR	95% CI
HIP	0.77	0.63,0.93
MALMO 1	0.82	0.67,1.00
MALMO 2	0.64	0.39,1.06
TWO-COUNTY	0.69	0.56,0.84
EDINBURGH	0.71	0.53,0.95
CNBSS 1	1.06	0.80,1.40
CNBSS 2	1.02	0.78,1.33
STOCKHOLM	0.74	0.51,1.08
GOTHENBURG	0.76	0.56,1.04
AGE	0.75	0.58,0.97
OVERALL	0.78	0.72,0.84

RANDOMIZED CONTROLLED TRIALS:

TRIAL	RR	95% CI
HIP	0.77	0.63,0.93
MALMO 1	0.82	0.67,1.00
MALMO 2	0.64	0.39,1.06
TWO-COUNTY	0.69	0.51,0.94
EDINBURGH	0.74	0.51,1.08
CNBSS 1	0.74	0.51,1.08
CNBSS 2	0.78	0.78,1.33
ST	0.74	0.51,1.08
GO	0.76	0.56,1.04
AGE	0.75	0.58,0.97
OVERALL	0.78	0.72,0.84

**22% decrease in death rate
among those offered screening**



MORE DIRECT PROOF OF BENEFIT=

- **National or provincial ORGANIZED
SCREENING PROGRAMS**



JANUARY 2006: SWEDISH ORGANIZED SCREENING DATA

- **Review of screening outcomes in nine counties (45% of the population of Sweden)**
- **Death rate in screened group decreased 44% since 1977!**



OTHER ORGANIZED SCREENING PROGRAMS WORLDWIDE

- **THE SAME RESULTS AS IN SWEDEN (40+% REDUCTION IN BREAST CANCER DEATHS) HAVE NOW BEEN REPRODUCED IN ORGANIZED SCREENING PROGRAMS IN:**

→ British Columbia

→ Nova Scotia

→ Australia

→ Norway

→ Holland ...& **15 OTHER COUNTRIES!**

(The U.S. has OPPORTUNISTIC screening) IVL



OTHER ORGANIZED SCREENING PROGRAMS WORLDWIDE

- **THE SAME RESULTS AS IN SWEDEN (40+% REDUCTION IN BREAST CANCER DEATHS) HAVE NOW BEEN REPRODUCED IN OTHER ORGANIZED SCREENING PROGRAMS**

→ Britain

→

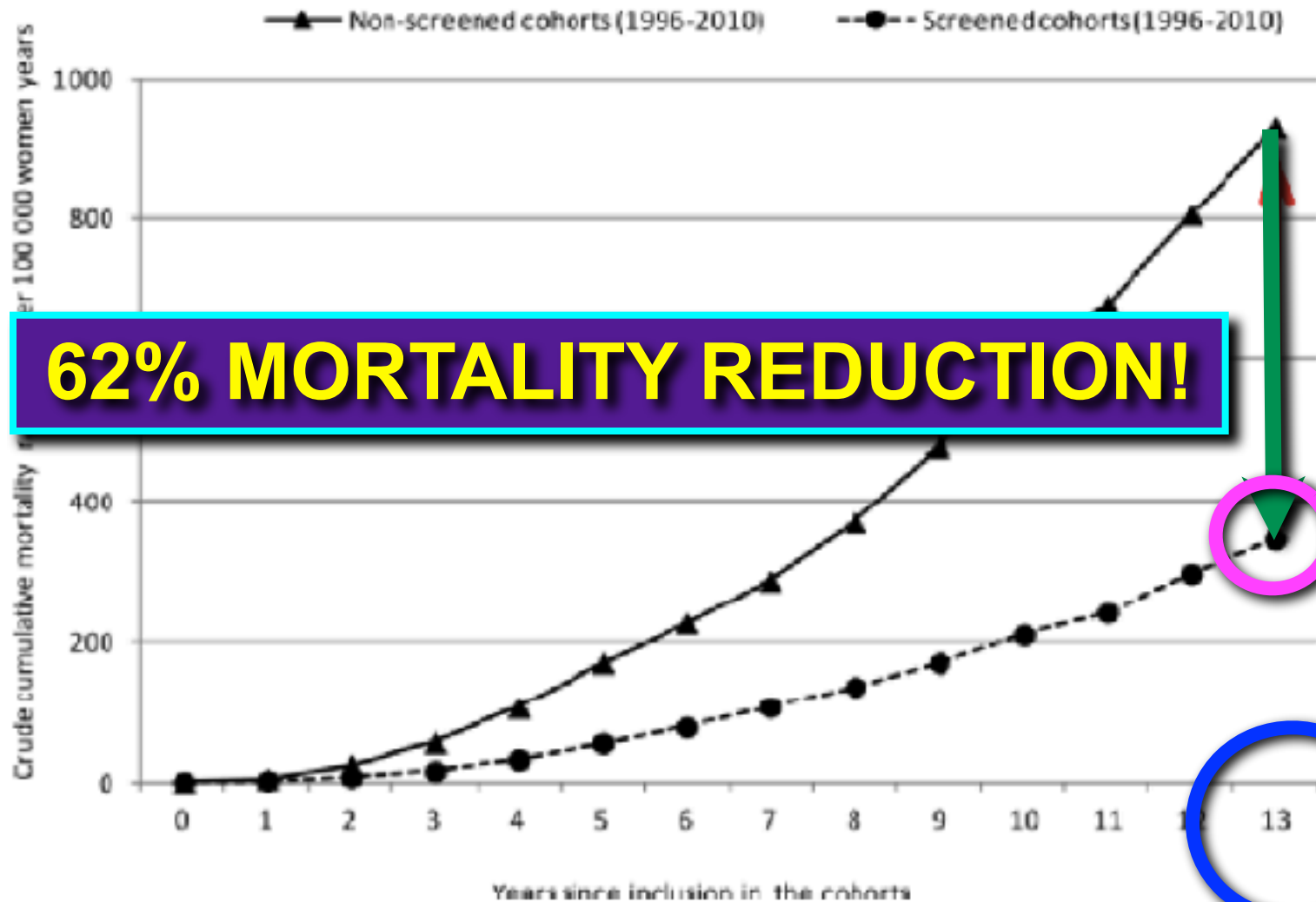
→

→ **Holland ...& 15 OTHER COUNTRIES!**

(The U.S. has OPPORTUNISTIC screening) IVL

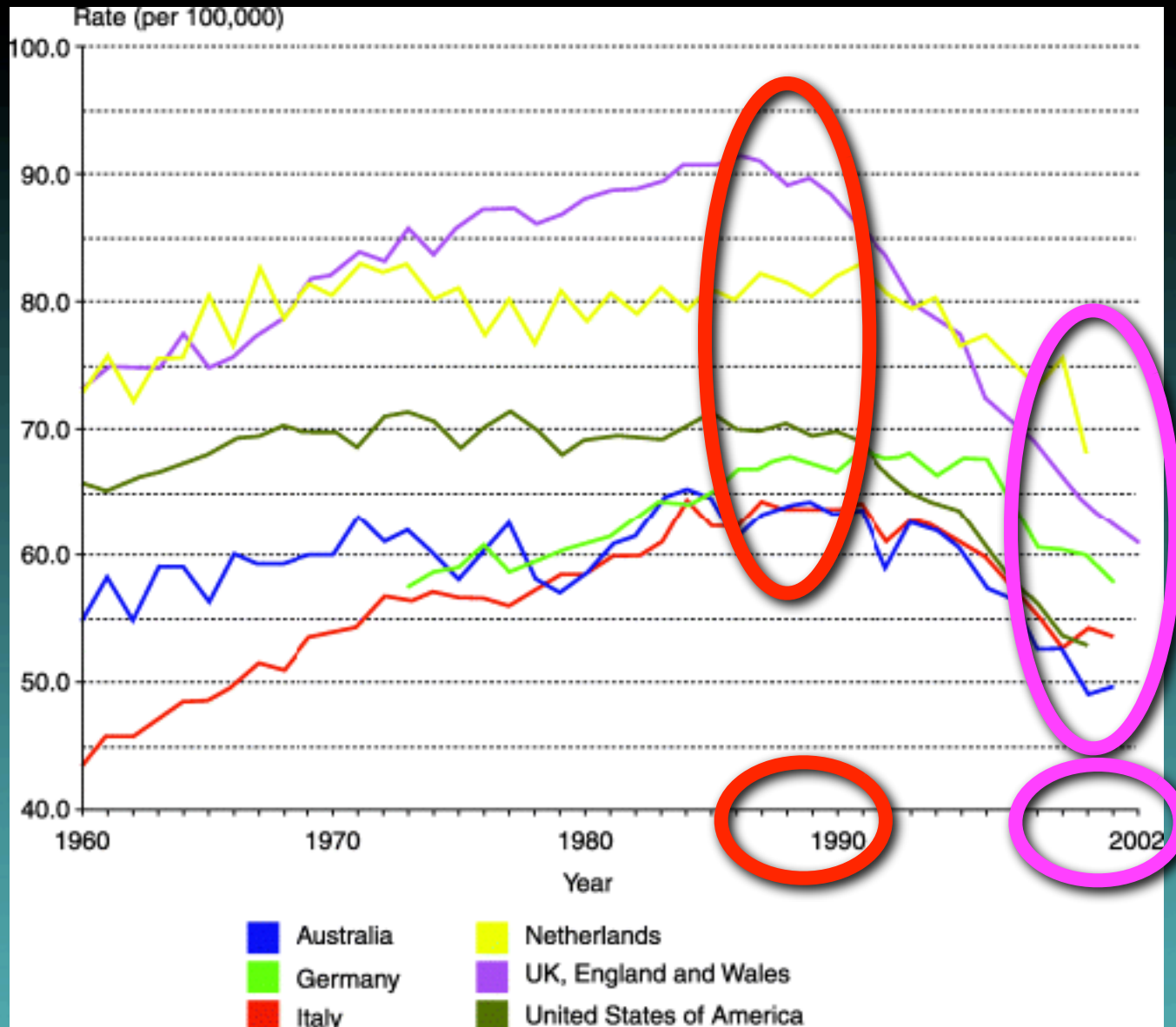
The Task Force also refused to look at any of these results!!!

NORWEGIAN BREAST CANCER SCREENING PROGRAM: 1996-2010



Age Adjusted Breast Cancer Mortality

Breast J 2006;12(suppl. 1):S70-S80

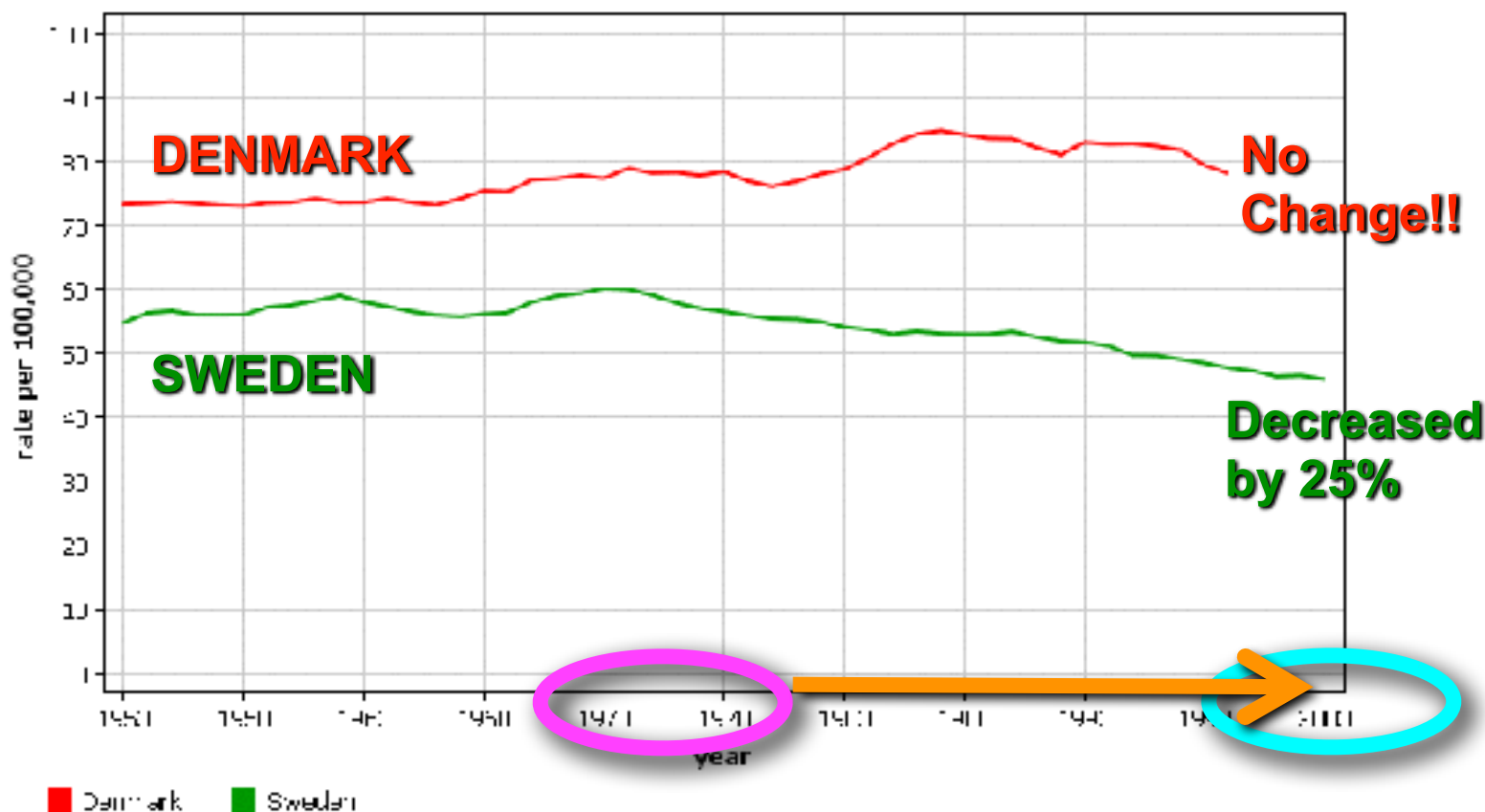


Breast cancer mortality rate in six countries, 1960-2002. Rates are age-standardized rates (world standard) per 100,000 at ages 45-74 years. UK, United Kingdom.



Compare BC Mortality in Sweden to that in Denmark, where organized screening didn't begin until the 1990s

Mortality from Breast Cancer
Age-standardized rate (World) age (40-85+)





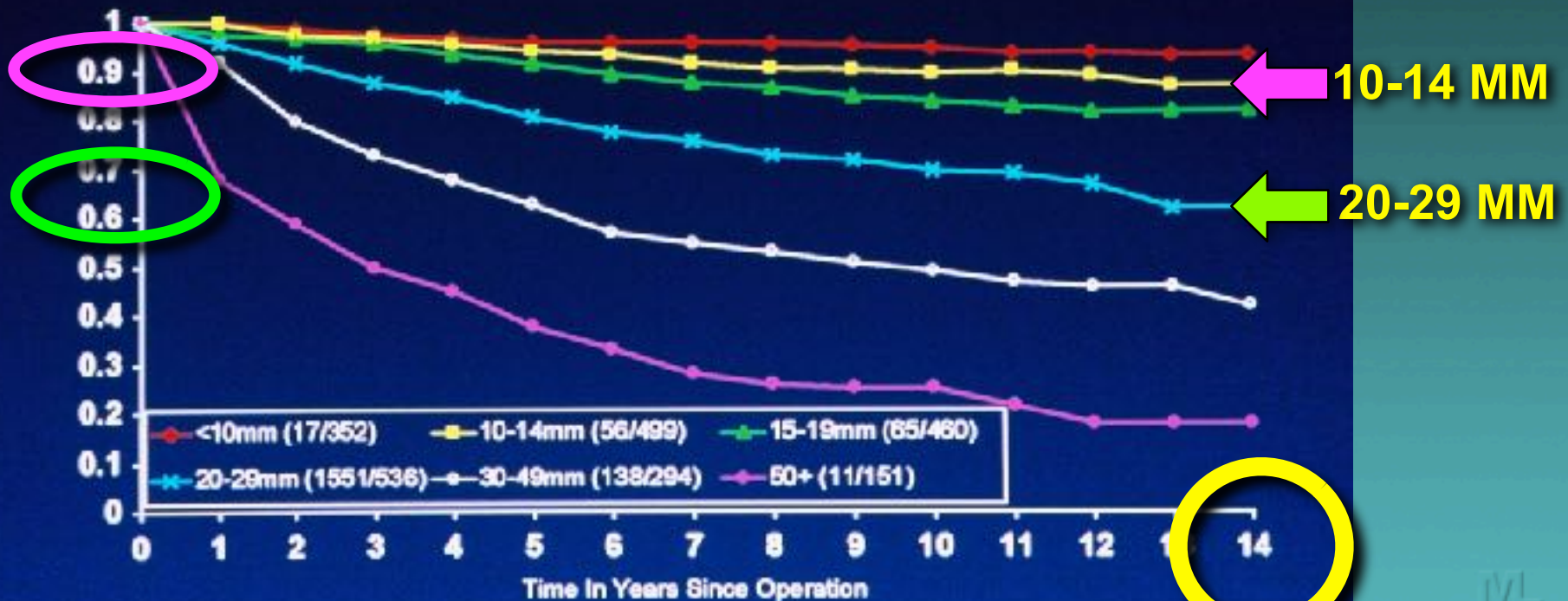
INDIRECT PROOF OF BENEFIT

- **Measure Surrogate End Points (non-controlled)**
 - ➔ **Small tumor size and lack of axillary lymph node involvement**
 - ➔ **This downstaging is shown to be responsible for the reduced mortality seen in the RCT's**



TUMOR SIZE AT DIAGNOSIS

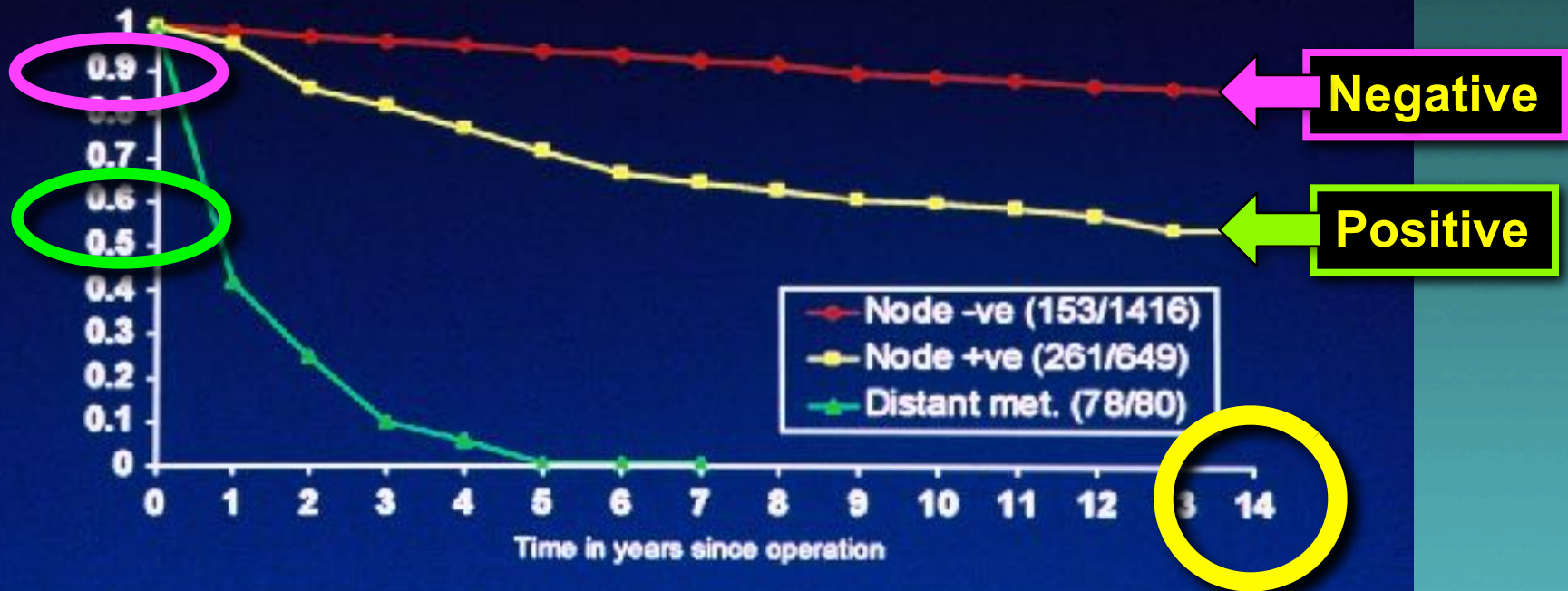
**Cumulative Survival of Women Aged 40-74
by Size Groups. W-E Trial**





LYMPH NODE STATUS

**Cumulative Survival of Women Aged 40-74
by Node Status. W-E Trial**

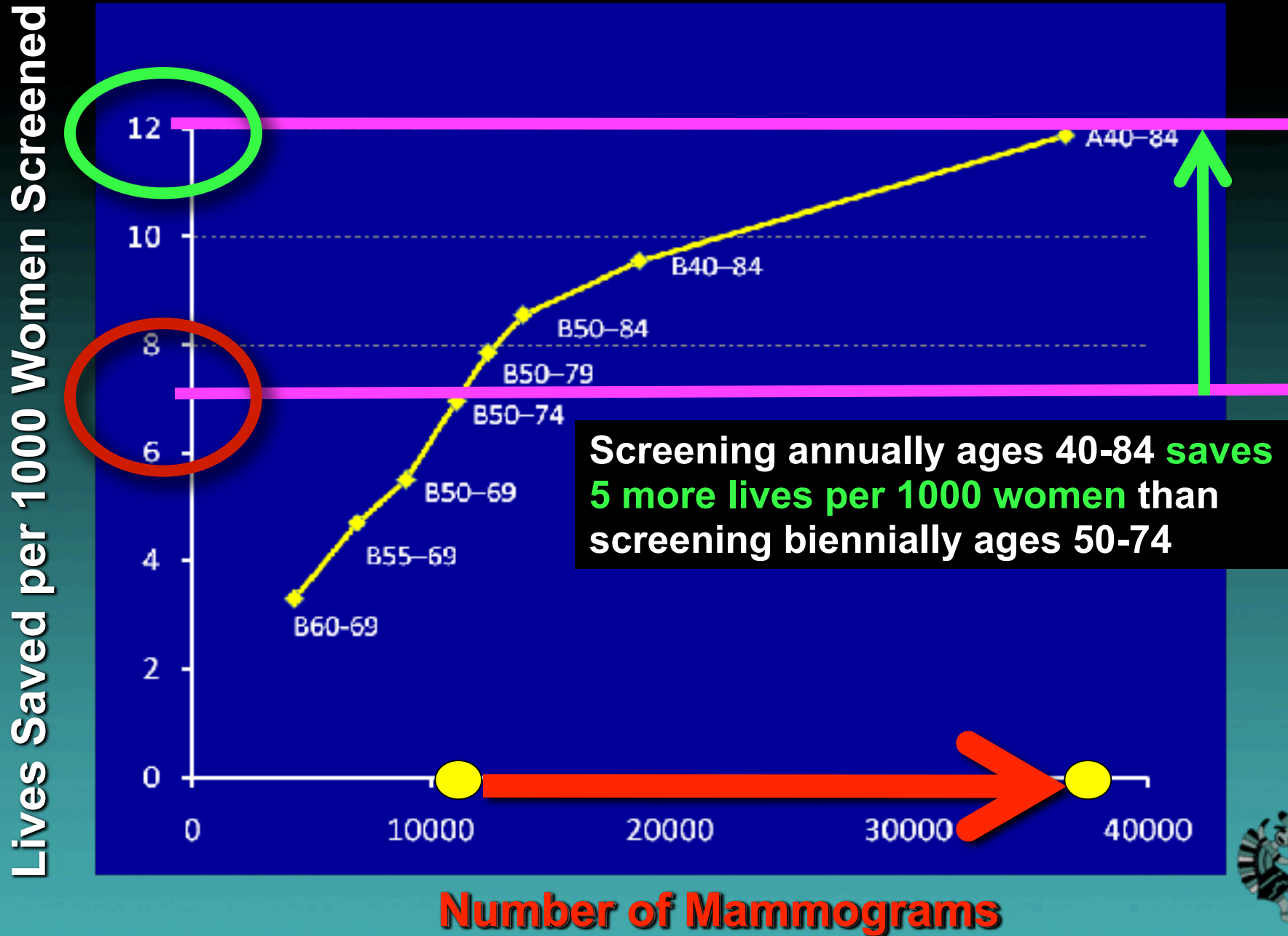




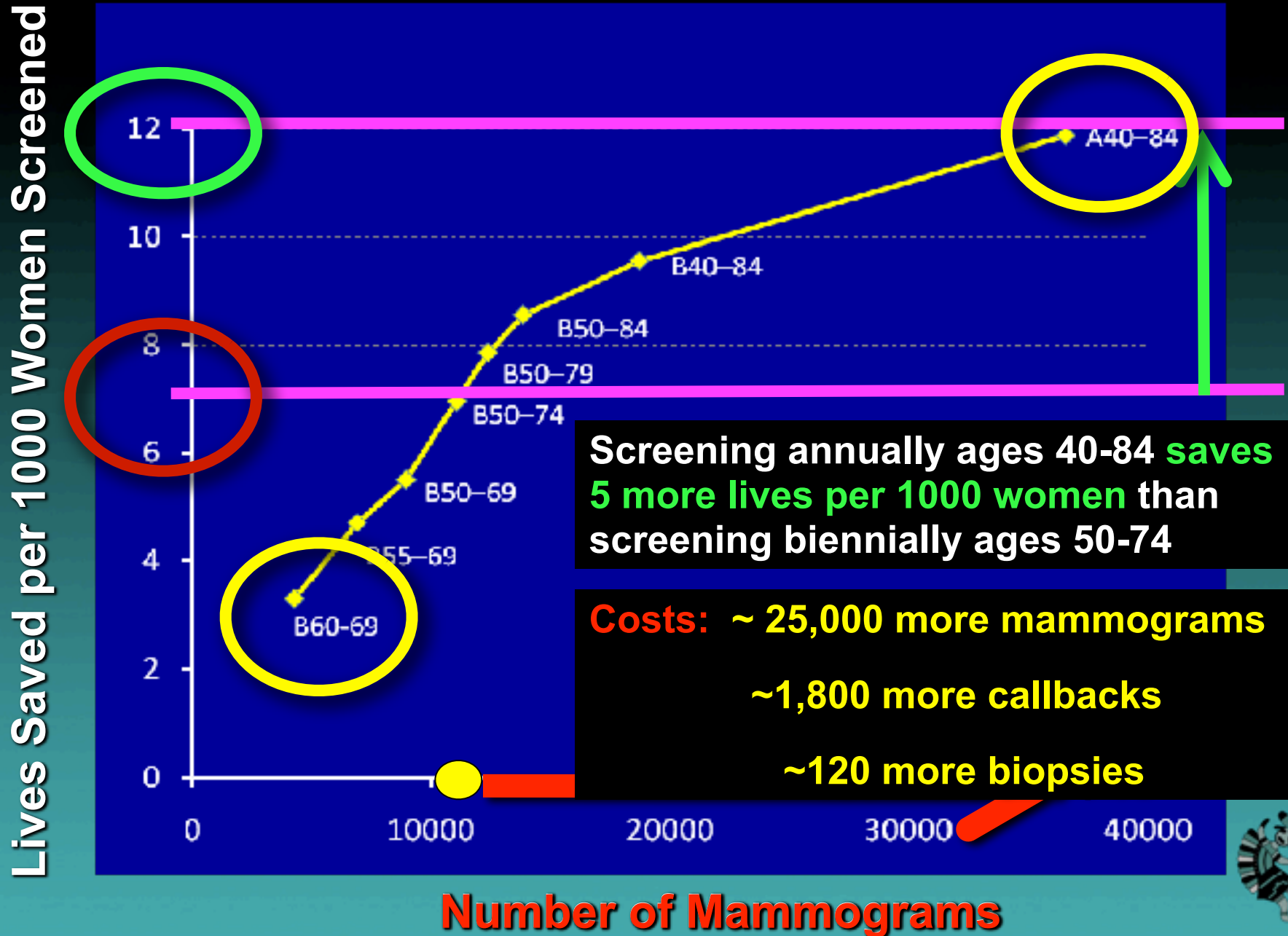
MORE EVIDENCE SHOWING BENEFIT TO SCREENING

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Lives Saved Averaged Over All 6 Models

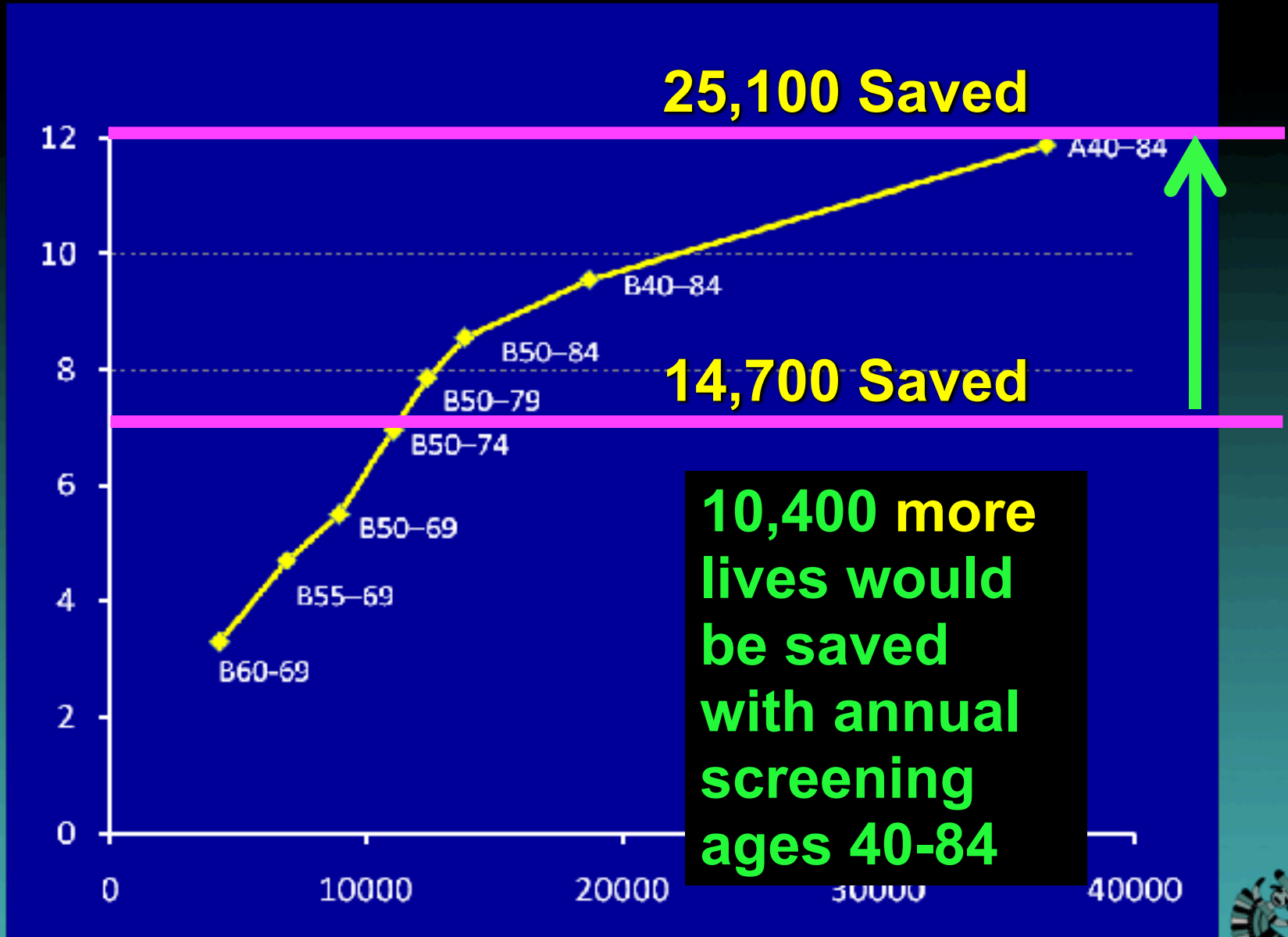


Lives Saved Averaged Over All 6 Models



Lives Saved Averaged Over All 6 Models

Lives Saved per 1000 Women Screened



Number of Mammograms



**USPSTF recommendations save
the most MAMMOGRAMS.....**

**Yearly screening beginning at
age 40 saves the most LIVES!**





NEW GUIDELINES OF THE US PREVENTIVE SERVICES TASK FORCE (JANUARY 11, 2016)

- **THEIR RATIONALE FOR NO SCREENING FOR WOMEN AGES 40-49:**
 - ➔ **They claim only a 15% mortality reduction from screening mammo in this group**
 - ➔ **They claim the harms (false positives, anxiety, pain, distress, overdiagnosis of DCIS, radiation exposure) of screening exceed the benefits of screening**

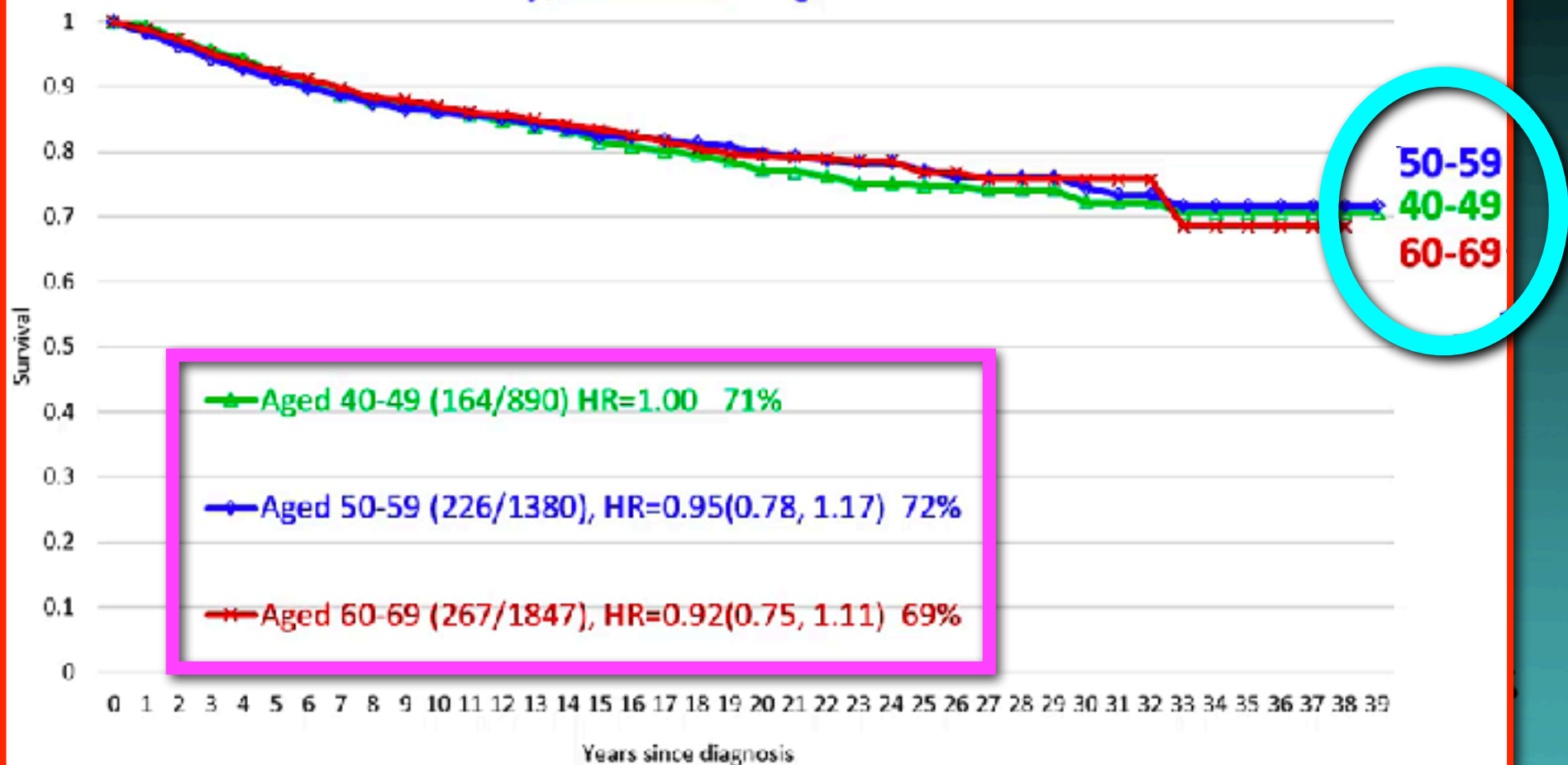


NEW GUIDELINES OF THE US PREVENTIVE SERVICES TASK FORCE (JANUARY 11, 2016)

- **THE TRUE FACTS ABOUT SCREENING FOR WOMEN AGES 40-49:**
 - ➔ **RCT'S and organized screening data show a 30-49% mortality reduction with screening mammography in this group!**
 - ➔ **40% of all years lost to breast cancer are in women ages 40-49 (these are the most aggressive cancers!)**

2 COUNTY TRIAL: CUMULATIVE SURVIVAL OF INVITED PATIENTS WITH BREAST CANCER, BY AGE GROUP

Cumulative survival of breast cancer patients by age group, Dalarna county, Sweden, diagnosed 1977-2014.





HARMS OF SCREENING (ACCORDING TO THE USPSTF)

- **Physical harms**
- **Psychological harms (ANXIETY!)**
- **Additional imaging & biopsies (false positive)**
- **Inconvenience**
- **Overdiagnosis**
- **Radiation exposure**
- **False negative results**



HARMS OF SCREENING (ACCORDING TO THE USPSTF)

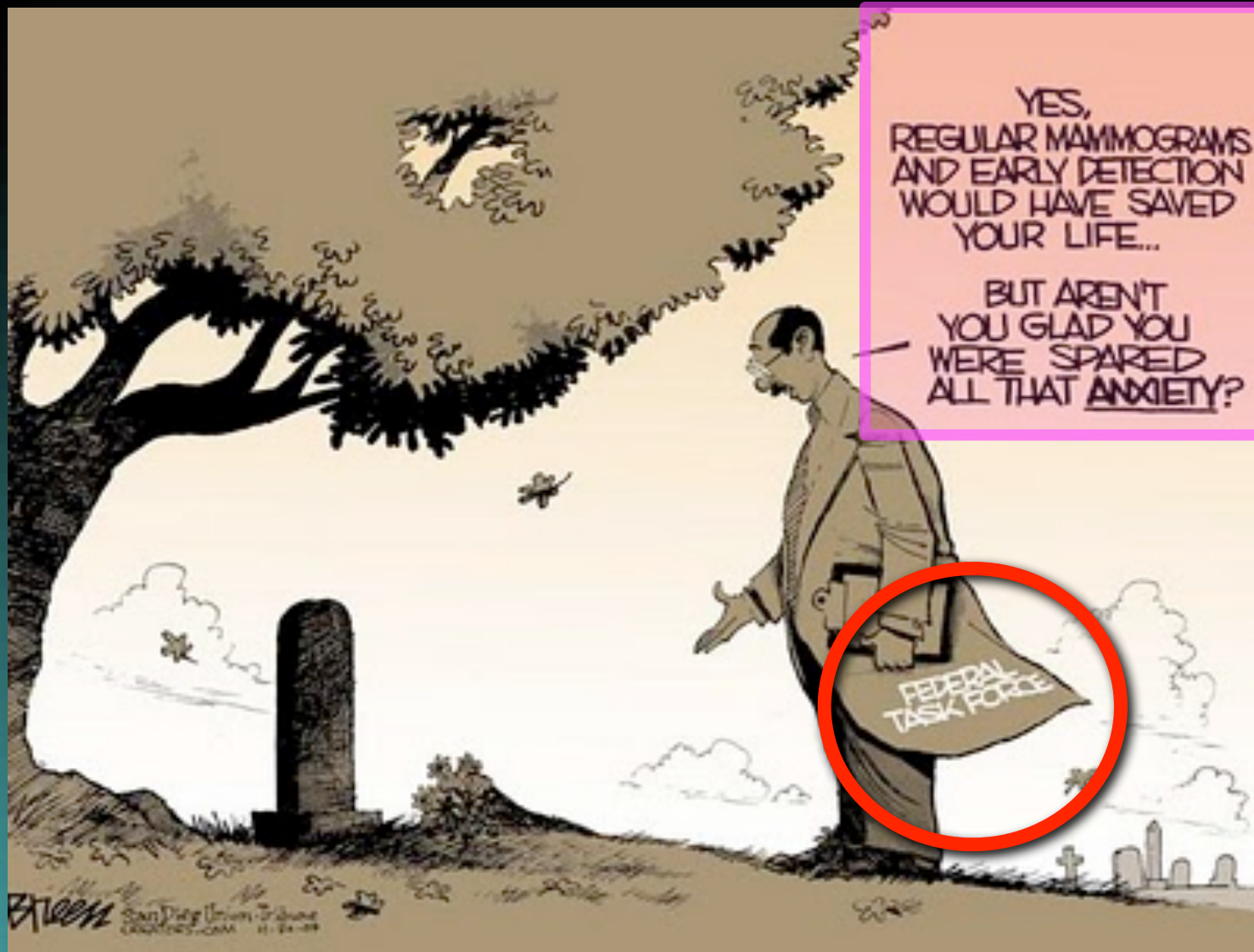
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HARMS OF SCREENING (ACCORDING TO THE USPSTF)

PSYCHOLOGICAL HARMS: ANXIETY, DISTRESS

- If patient given negative results clearly, then there is “minimal anxiety”
- (Therefore, screening mammography is a “good news” exam for 90% of women!)
- For those recalled from screening, studies are “mixed”: some showed transient anxiety, others showed no difference compared to women with negative screening mammos
- Therefore, anxiety & distress are “usually transient” and “not a barrier to screening”





HARMS OF SCREENING

(ACCORDING TO THE USPSTF)

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- **Radiation exposure**
- **False negative results**



HARMS OF SCREENING **(ACCORDING TO THE USPSTF)**

OVERDIAGNOSIS: TWO SCENARIOS

- ➔ **Diagnosis and treatment of breast cancers that would never become apparent during a woman's lifetime (mostly young women)**
- ➔ **Unnecessary early diagnosis and treatment for breast cancers that would have become clinically apparent, but would not have shortened a woman's life (she would have died of something else first [older women])**

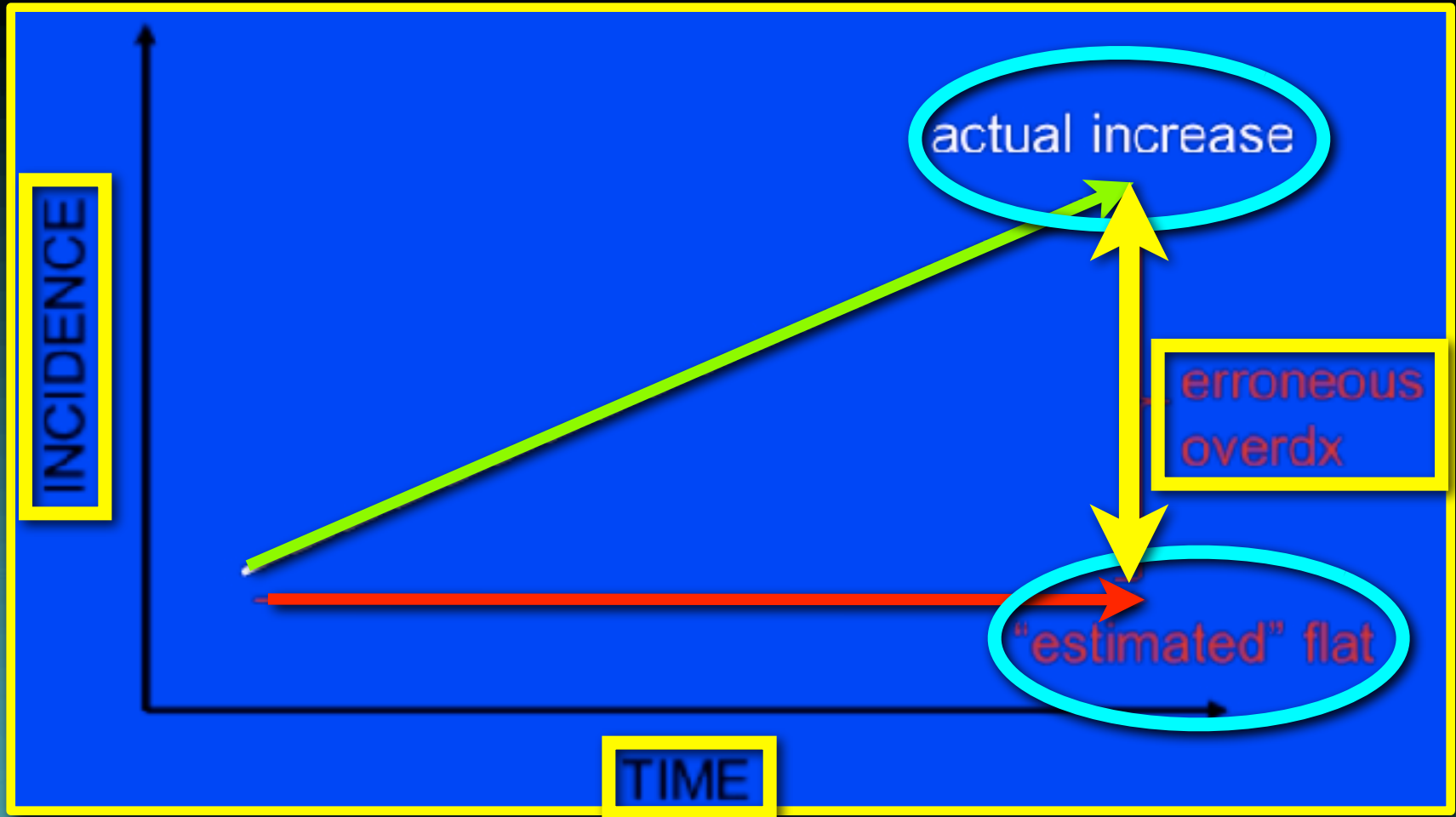


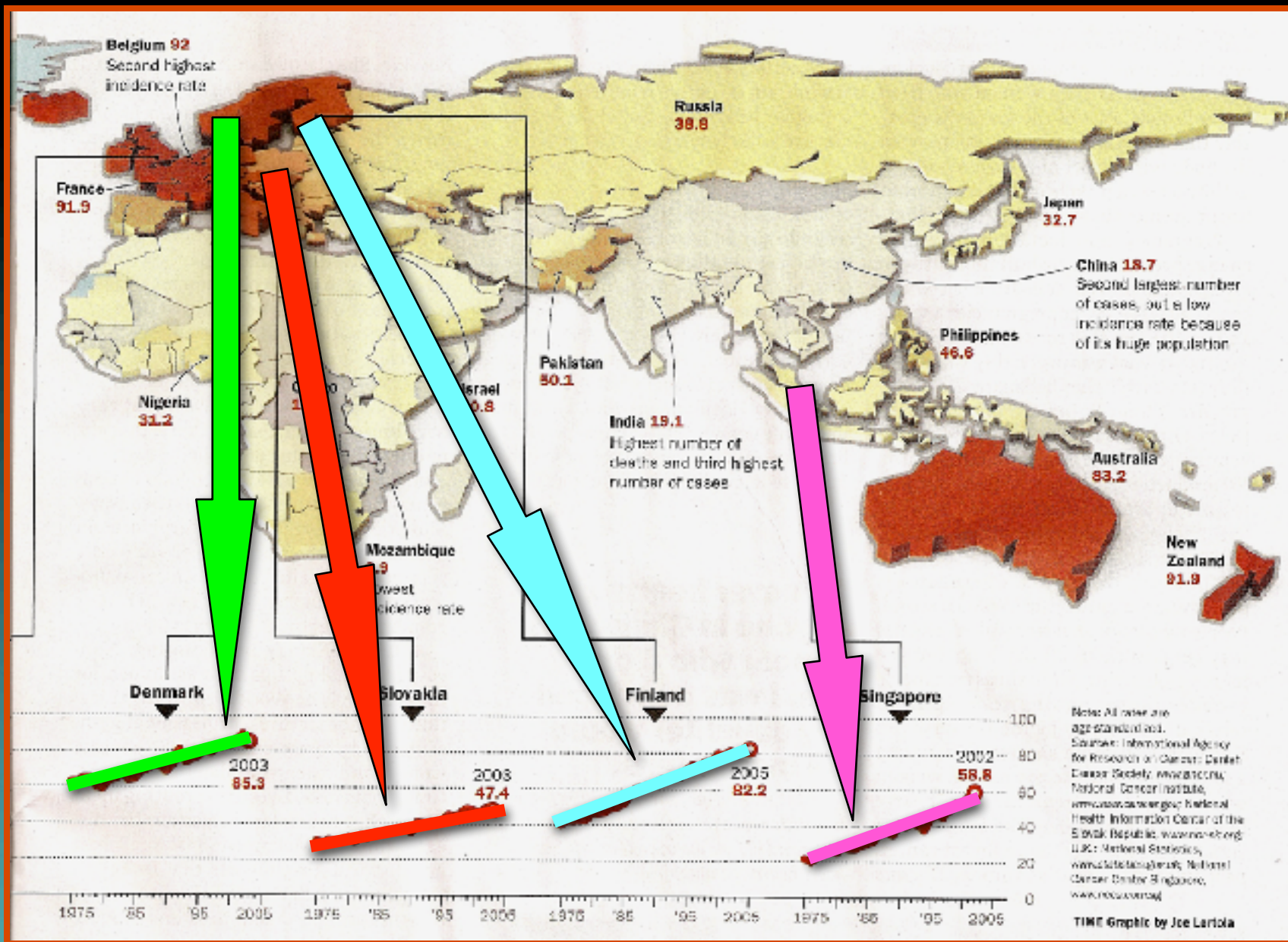
HARMS OF SCREENING **(ACCORDING TO THE USPSTF)**

OVERDIAGNOSIS

- ➔ **HOWEVER- The REAL problem is mostly OVERTREATMENT of minimal cancers (esp. low grade DCIS), not overdiagnosis!!**
- ➔ **IN ADDITION, the opponents of screening erroneously claim that the increasing number of cancers being seen is due to our diagnosing too many new “harmless” ones!**

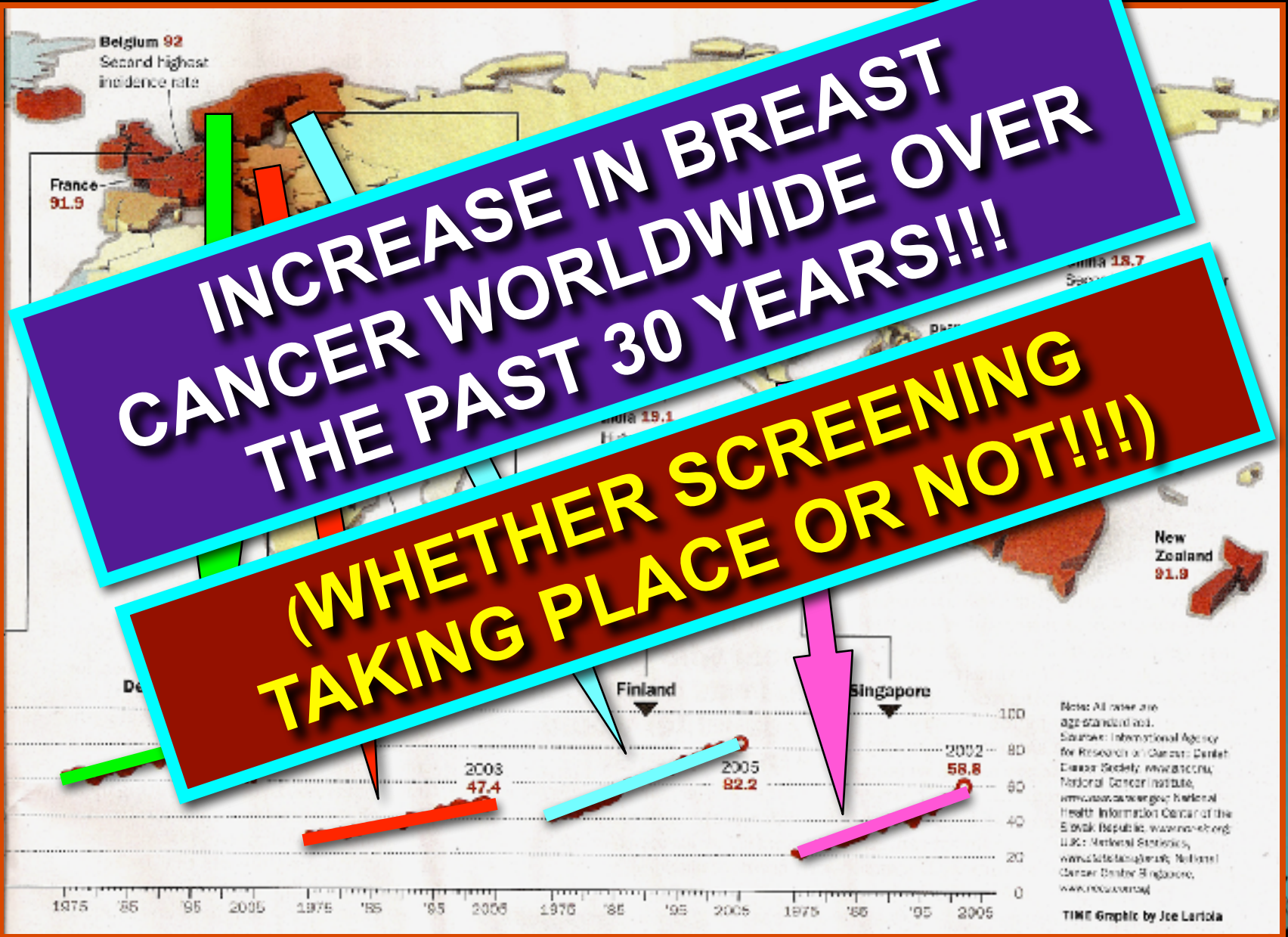
OVERDIAGNOSIS



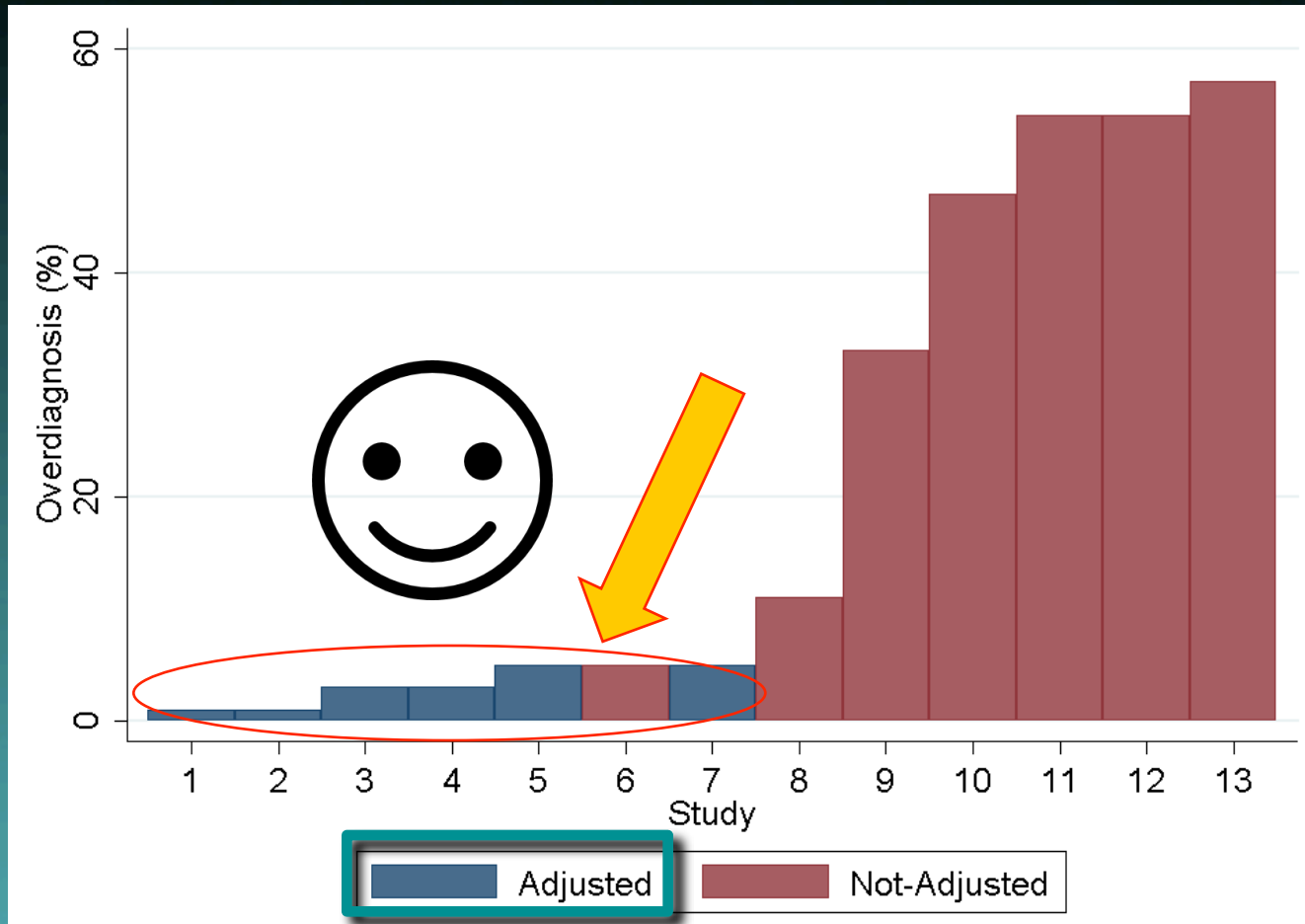


**INCREASE IN BREAST
CANCER WORLDWIDE OVER
THE PAST 30 YEARS!!!**

**(WHETHER SCREENING
TAKING PLACE OR NOT!!!)**



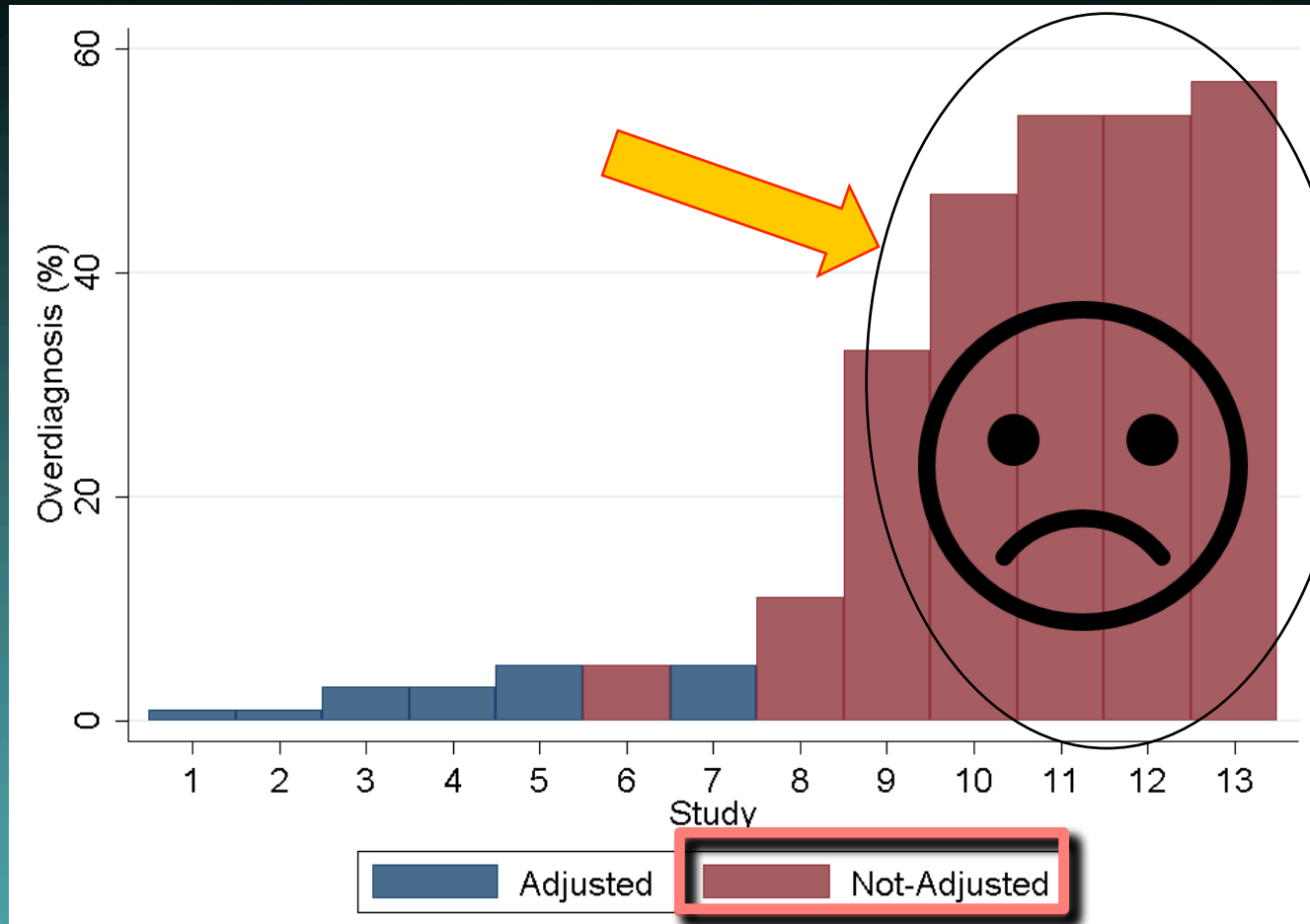
RANGE OF OVERDIAGNOSIS BY ORGANIZED SCREENING PROGRAMS, ADJUSTING FOR INCREASING INCIDENCE (AND LEAD TIME)



COURTESY DR. LASZLO TABAR



RANGE OF OVERDIAGNOSIS BY ORGANIZED SCREENING PROGRAMS, ADJUSTING FOR INCREASING INCIDENCE (AND LEAD TIME)



COURTESY DR. LASZLO TABAR



ORIGINAL ARTICLE

Overdiagnosis in mammographic screening for breast cancer in Europe: a literature review

Donella Puliti, Stephen W Duffy, Guido Miccinesi, Harry de Koning, Elsebeth Lynge, Marco Zappa, Eugenio Paci and the EUROSREEN Working Group (members listed at the end of the paper)

J Med Screen 2012;19 Suppl 1:42–56
DOI: 10.1258/jms.2012.010082

Conclusions The most plausible estimates of overdiagnosis range from 1% to 10%. Substantially higher estimates of overdiagnosis reported in the literature are due to the lack of adjustment for breast cancer risk and/or lead time.

See end of article for authors' affiliations

Correspondence to:
Eugenio Paci, Clinical and Descriptive Epidemiology Unit, SPO – Cancer Research and Prevention Institute, Via della Obolite 2, 50141 Florence, Italy; e.paci@sipo.toscana.it

Accepted for publication
21 June 2012

Abstract We conducted a literature review of observational studies that provided estimates of breast cancer overdiagnosis in European population-based mammographic screening programmes. Studies were classified according to the presence and the type of adjustment for breast cancer risk (data, model and covariates used), and for lead time (statistical adjustment or compensatory drop). We expressed estimates of overdiagnosis from each study as a percentage of the expected incidence in the absence of screening, even if the variability in the age range of the denominator could not be removed. Estimates including carcinoma *in situ* were considered when available.

Results There were 13 primary studies reporting 16 estimates of overdiagnosis in seven European countries (the Netherlands, Italy, Norway, Sweden, Denmark, UK and Spain). Unadjusted estimates ranged from 0% to 54%. Reported estimates adjusted for breast cancer risk and lead time were 2.8% in the Netherlands, 4.6% and 1.0% in Italy, 7.0% in Denmark and 10% and 3.3% in England and Wales.

Conclusions The most plausible estimates of overdiagnosis range from 1% to 10%. Substantially higher estimates of overdiagnosis reported in the literature are due to the lack of adjustment for breast cancer risk and/or lead time.



CONCLUSION:

**THERE ARE NO CREDIBLE DATA
TO SUPPORT THE CONCLUSION
THAT THE MAJORITY OF SCREEN-
DETECTED BREAST CANCERS
WOULD NEVER PROGRESS TO
CLINICALLY PALPABLE BREAST
CANCERS!!**





CONDITIONS THAT ARE DEFINITELY OVERDIAGNOSED

- “Fibrocystic disease” by our clinical colleagues
- ADD in children, and Alzheimer’s in the aged
- Intelligence in politicians and members of the USPSTF!

**USPSTF carefully examined the
“HARMS” of screening.....**

**BUT- what about the “HARMS” of
NOT screening?**





HARMS OF NOT SCREENING **(SOMEHOW OVERLOOKED BY USPSTF)**

- ➔ **For women 30-39 today, if they were to follow the USPSTF guidelines for screening, rather than the ACR guidelines for screening mammograms yearly beginning at age 40, 99,829 MORE women would die of breast cancer between the ages of 40 and 84!***

***Source:** Hendrick and Helvie, AJR, 2011; 196: W112-W116



HARMS OF NOT SCREENING **(SOMEHOW OVERLOOKED BY USPSTF)**

- For women 30-39 today, if they were to follow the USPSTF guidelines for screening, rather than the ACS guidelines for screening mammograms yearly beginning at age 40, **99,829 MORE** women would die of breast cancer between the ages of 40 and 84!*
- **If these numbers are calculated based on the current 65% screening compliance rate in the U.S., then the number of additional women's deaths from breast cancer in this cohort would be only 65,000***

***Source:** Hendrick and Helvie, AJR, 2011; 196: W112-W116



HARMS OF NOT SCREENING **(SOMEHOW OVERLOOKED BY USPSTF)**

- **By finding cancer when it is smaller, then less extensive surgery can be performed, with much better cosmetic results**
- **It is much less expensive to care for a woman with early breast cancer rather than advanced breast cancer, with better outcomes and less suffering for the patient, and for her family**

CONSEQUENCES OF EARLY CANCERS FOUND AT SCREENING VS. LATER CANCERS FOUND CLINICALLY

	Screened	Symptoms
Mastectomy	25%	47%
BCT	67%	48%
Chemotherapy	45%	81%

Malgren JA et al. **Radiology** 2012;262:797-806





OTHER HARMS OF NOT SCREENING (SOMEHOW OVERLOOKED BY USPSTF)

Cost of treating far-advanced cancer

Breast Cancer Res Treat (2012) 134:815–822
DOI 10.1007/s10549-012-2097-2

EPIDEMIOLOGY

The economic burden of metastatic breast cancer: a U.S. managed care perspective

Alberto J. Montero • Sara Eapen • Brian Gorin •
Paulette Adler

Assuming average PPPM costs of \$9,788 and an average life expectancy of 2.2 years, the total average expenditure to treat mBC would be ~\$250,000 per patient.



HARMS OF NOT SCREENING **(SOMEHOW OVERLOOKED BY USPSTF)**

HEALTH COUNCIL OF THE NETHERLANDS BREAST CANCER SCREENING REPORT:

- ➔ **1,600 Euros saved per life year gained**
- ➔ **For each breast cancer death prevented by screening, the woman will be spared the terminal stages of this disease, AND**
- ➔ **She will gain an average of 16.5 life years!!**

***Source:** Netherlands Health Council Population Screening for Breast Cancer: Expectations and Developments, January, 2014



HARMS OF NOT SCREENING **(SOMEHOW OVERLOOKED BY USPSTF)**

- **When the young breast cancer patient dies, her family loses a wife, mother, caretaker to her parents, and a productive member of the work force, at a huge emotional and financial cost to both the family and to society on all counts!**

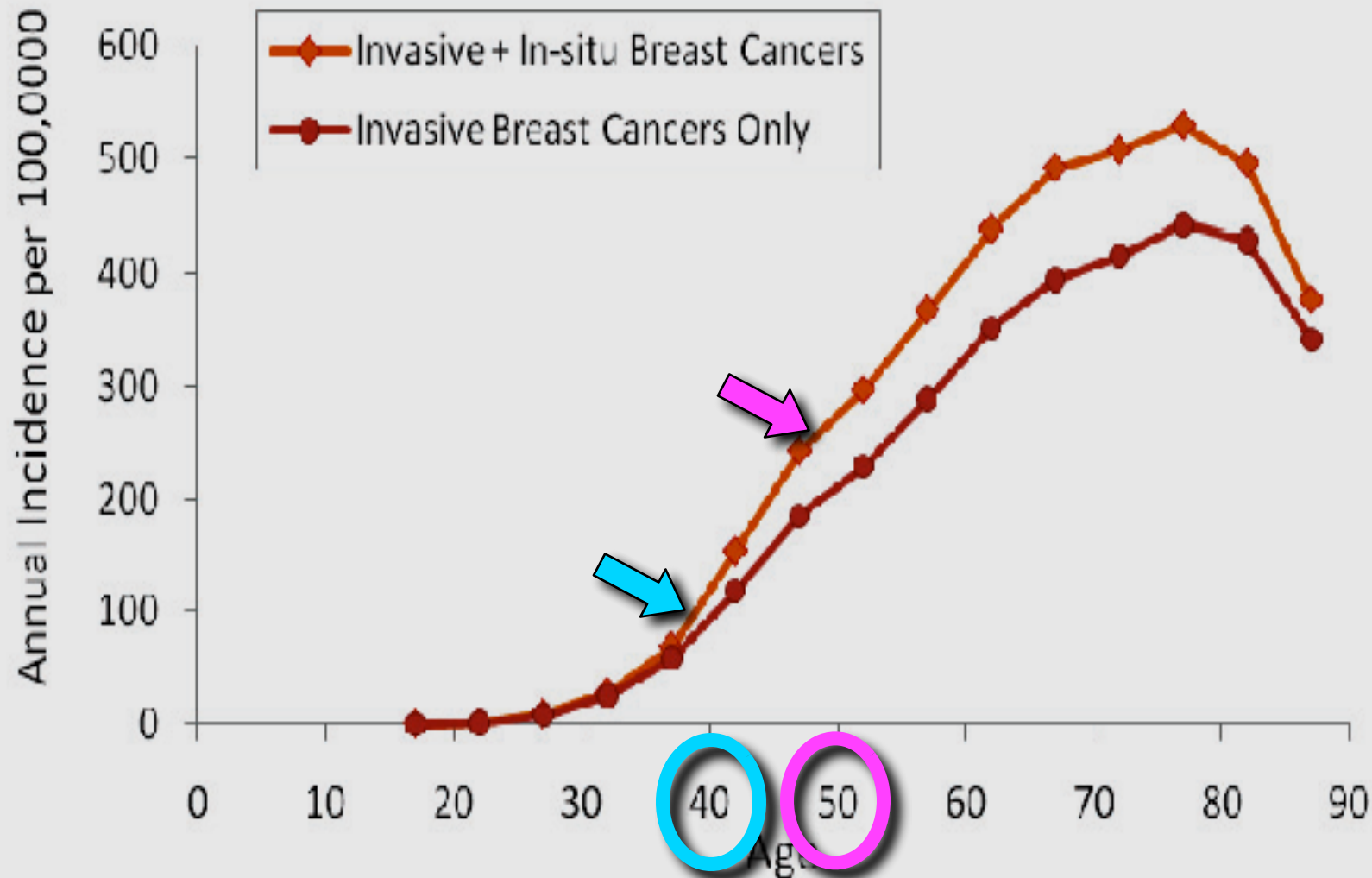


NEW GUIDELINES OF THE US PREVENTIVE SERVICES TASK FORCE (JANUARY 11, 2016)

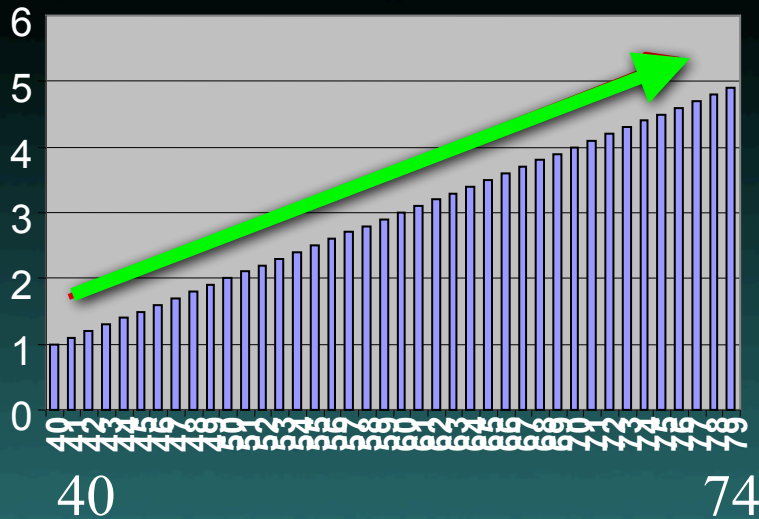
IN SUM:

- ➔ **Panel overlooked the REAL HARMS of NOT SCREENING**, such as huge costs in pain, suffering & money in treating advanced ca, and oh, by the way, early & tragic death!
- ➔ **Nothing magical happens at age 50: the incidence of breast cancer increases gradually and continually beginning at 40!**

Age-Specific Breast Cancer Incidence Rate per 100,000 Females, SEER 2002-2006



Age grouping has been used to make data that actually change gradually with increasing age (falsely) appear to change suddenly at the age of 50.



Reality = Incidence increases gradually with each year of age

The same data, grouped and averaged, *falsely* suggest a jump at the age of 50





THE “HARMS” OF SCREENING

- There are harms (risks?) in screening for breast cancer, JUST AS THERE ARE IN ANY OTHER TEST IN MEDICINE
- These cannot and should not be trivialized, but they pale when compared to the real harms of NOT screening
- Early and tragic death from advanced breast cancer would seem a greater harm than all the other “harms” combined
- The Task Force clearly made a “value judgement”, not a scientific judgement



NEW GUIDELINES OF THE US PREVENTIVE SERVICES TASK FORCE (APRIL 20, 2015)

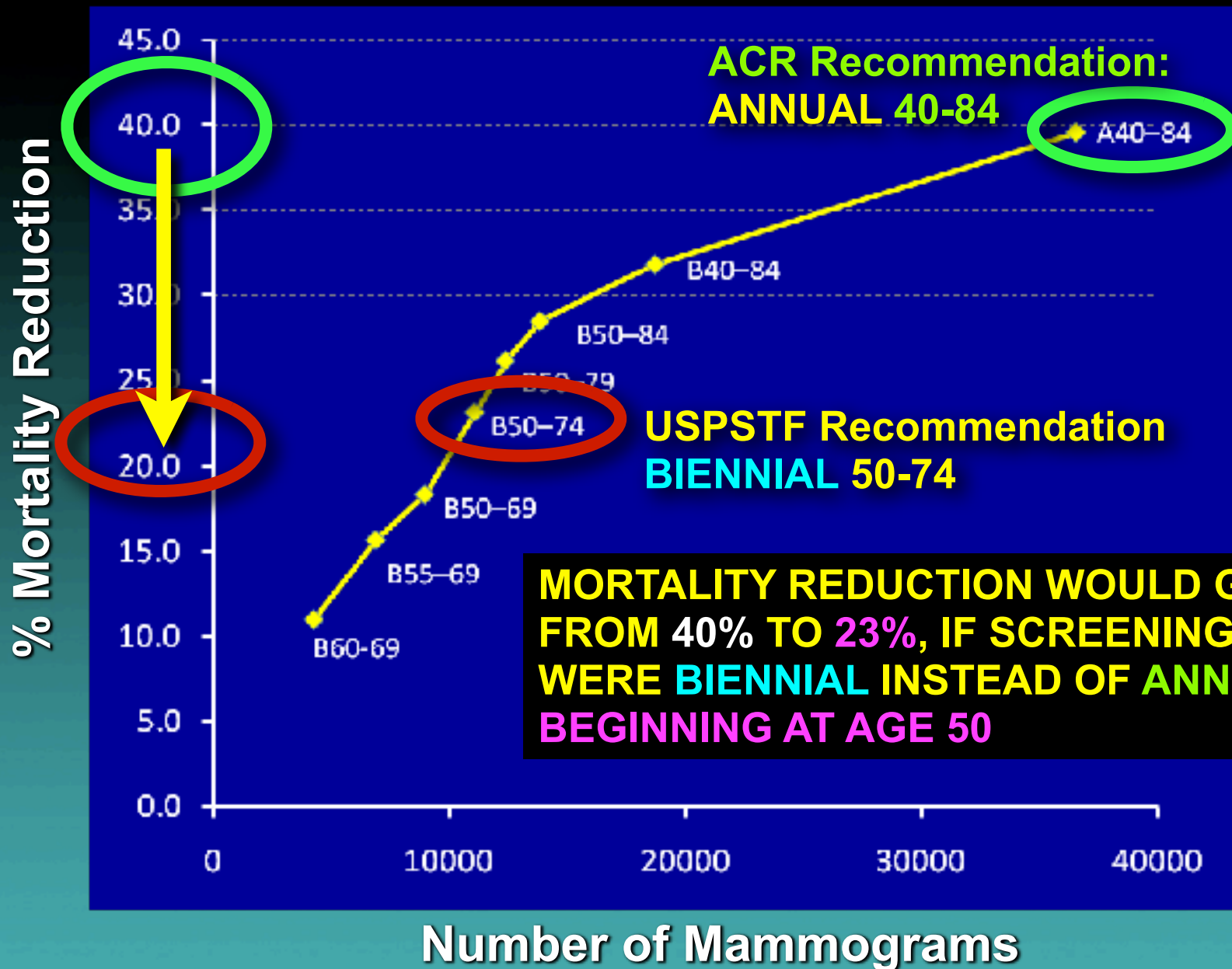
- THEIR RATIONALE FOR SCREENING EVERY TWO YEARS FOR WOMEN AGES 50-74:
 - They claim NO appreciable mortality reduction from screening every year as compared to every two years
 - They say the 1300 women who are screened for every year of life saved in this age group are “enough” to justify screening them
 - They claim the harms are doubled by screening every year instead of every two years



NEW GUIDELINES OF THE US PREVENTIVE SERVICES TASK FORCE (APRIL 20, 2015)

- **THE TRUE FACTS ABOUT SCREENING FOR WOMEN AGES 50-74:**
 - **At least 20% more lives are saved by screening every year instead of every 2 years**

Mortality Reduction Averaged Over All 6 Models





SCREENING: BENEFITS VS. RISKS

- **BENEFITS:**

- **At least 40% fewer deaths**
- **Less extensive surgery**
- **Less chemotherapy**

- **RISKS (SO-CALLED “HARMS”):**

- **Recall for further imaging**
- **Minimally invasive biopsy**
- **Transient Anxiety**
- **Some Overdiagnosis**

**Since the 2009 USPSTF
recommendations,
even more impressive
supportive data **were**
published (and somehow
overlooked by the 2016
USPSTF):**



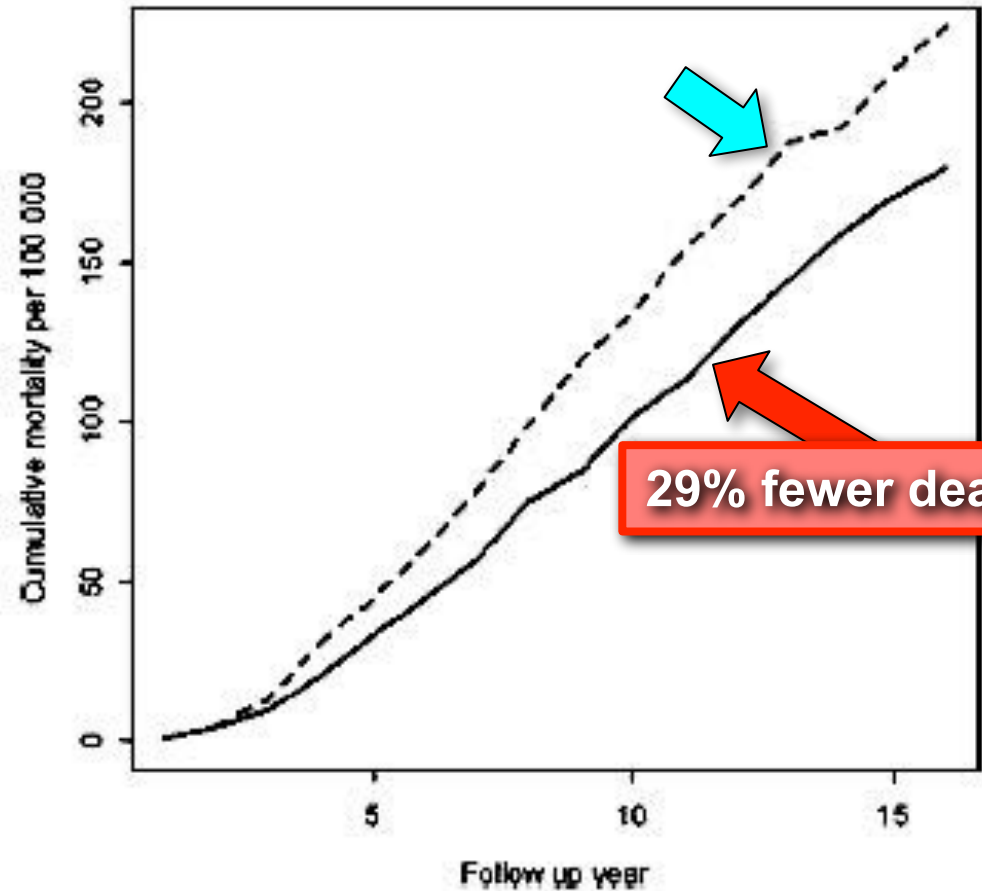
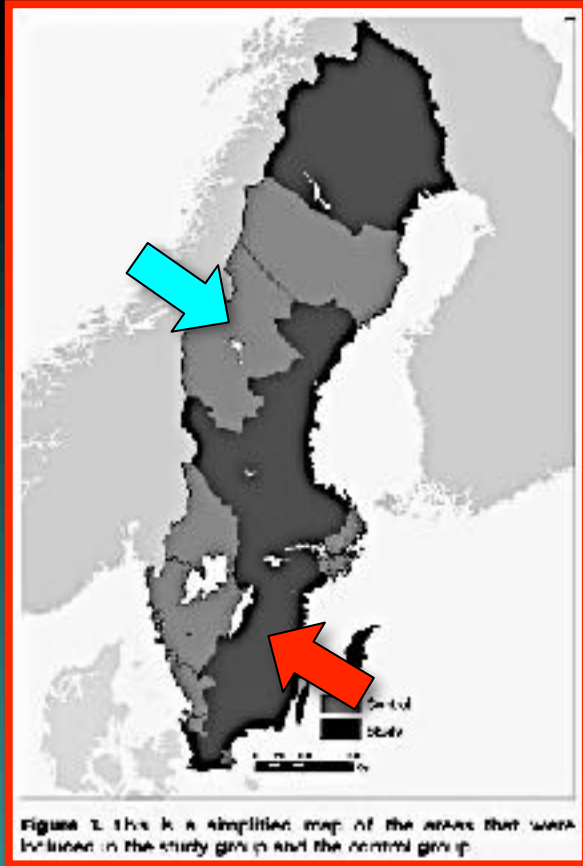


SEPTEMBER 30, 2010: **TABAR'S 40-49 GROUP STUDY PUBLISHED***

- **Evaluated mortality rates in 40-49 group obtaining screening vs. not screened**
 - ➔ **Evaluated 600,000 women, with 7.3 M yrs in screened group, & 8.8 M years not**
- **There was a 29% decrease in breast cancer deaths in 40-49 group getting screened!**

*-Numan B, Duffey SW, Abdsaleh S, Bjorneld L, Bordas P, **Tabar L** et al: Effectiveness of Population-Based Service Screening with Mammography for Women Ages 40 to 49 Years. **Cancer, October, 2010**

TABAR 40-49 GROUP STUDY



*-Numan B, Duffey SW, Abdsaleh S, Bjorneld L, Bordas P, **Tabar L** et al: Effectiveness of Population-Based Service Screening with Mammography for Women Ages 40 to 49 Years. **Cancer, October, 2010**





SEPTEMBER, 2011: **SECOND OF 2 LANDMARK TABAR STUDIES***

- **29 year follow-up on Swedish Two-County Trial**
 - ➔ **Evaluated 133,000 women, with screening beginning in the trial in 1977**
- **There was a 31% decrease in BC deaths in group invited to screening after 29 years!**

*- Tabar L, Vitak B, Chen THH, Yen AMF, Cohen A, et al: Swedish Two-County Trial: Impact of Mammographic Screening on Breast Cancer Mortality during 3 Decades. **Radiology, September 2011, Vol. 260, P. 658**



SEPTEMBER, 2011: **SECOND OF 2 LANDMARK TABAR STUDIES***

- 29 year **follow-up on Swedish Two-County Trial**

→ **Evaluated**

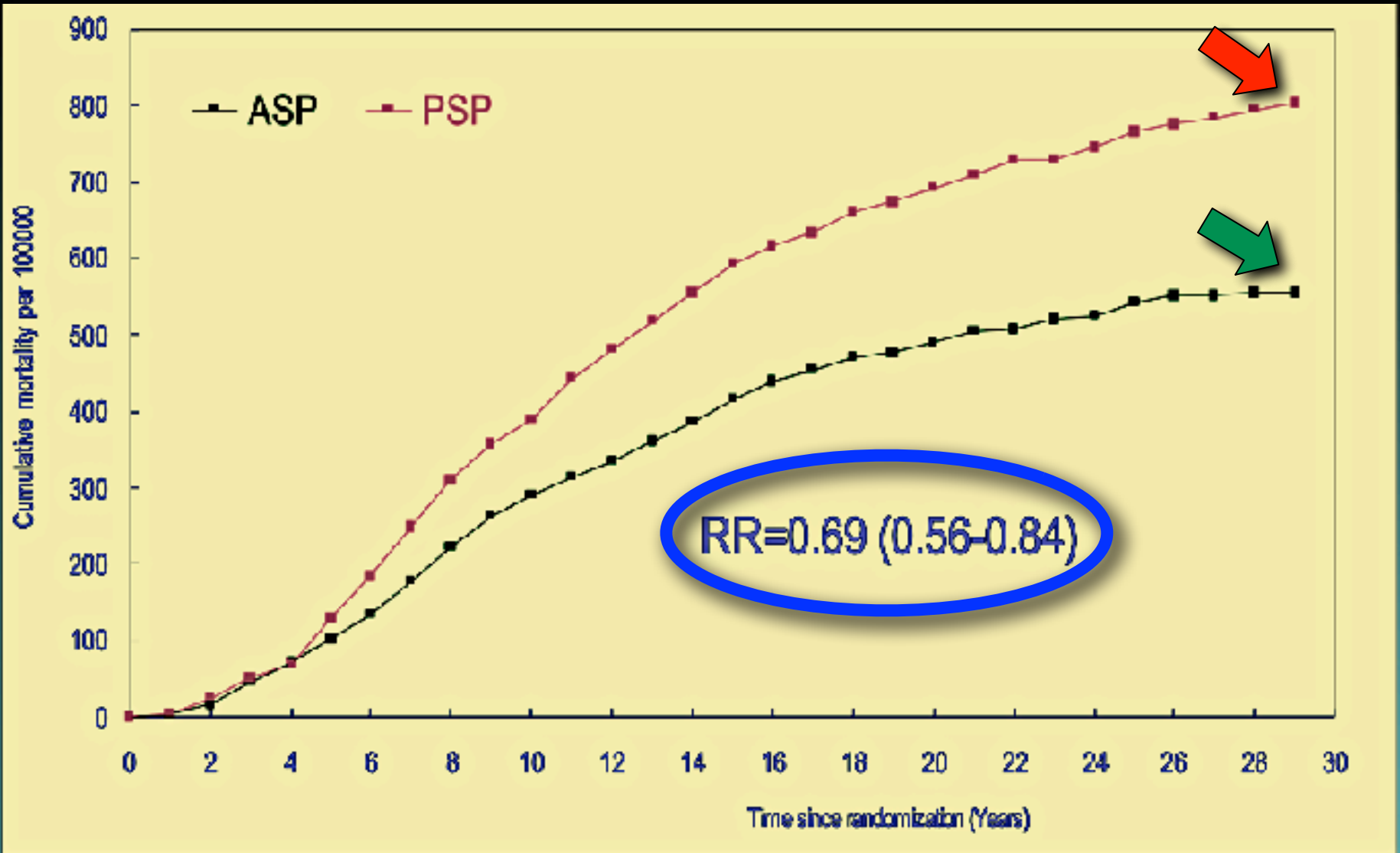
RECEIVED RSNA AWARD AS THE BEST SCIENTIFIC PAPER OF THE YEAR IN 2011!

screening in the trial in 1977

- **There was a 31% decrease in BC deaths in the group invited to screening after 29 years!**

*- Tabar L, Vitak B, Chen THH, Yen AMF, Cohen A, et al: Swedish Two-County Trial: Impact of Mammographic Screening on Breast Cancer Mortality during 3 Decades. **Radiology, September 2011, Vol. 260, P. 658**

CUMULATIVE BREAST CANCER DEATHS OVER 29 YRS.- WE TRIAL





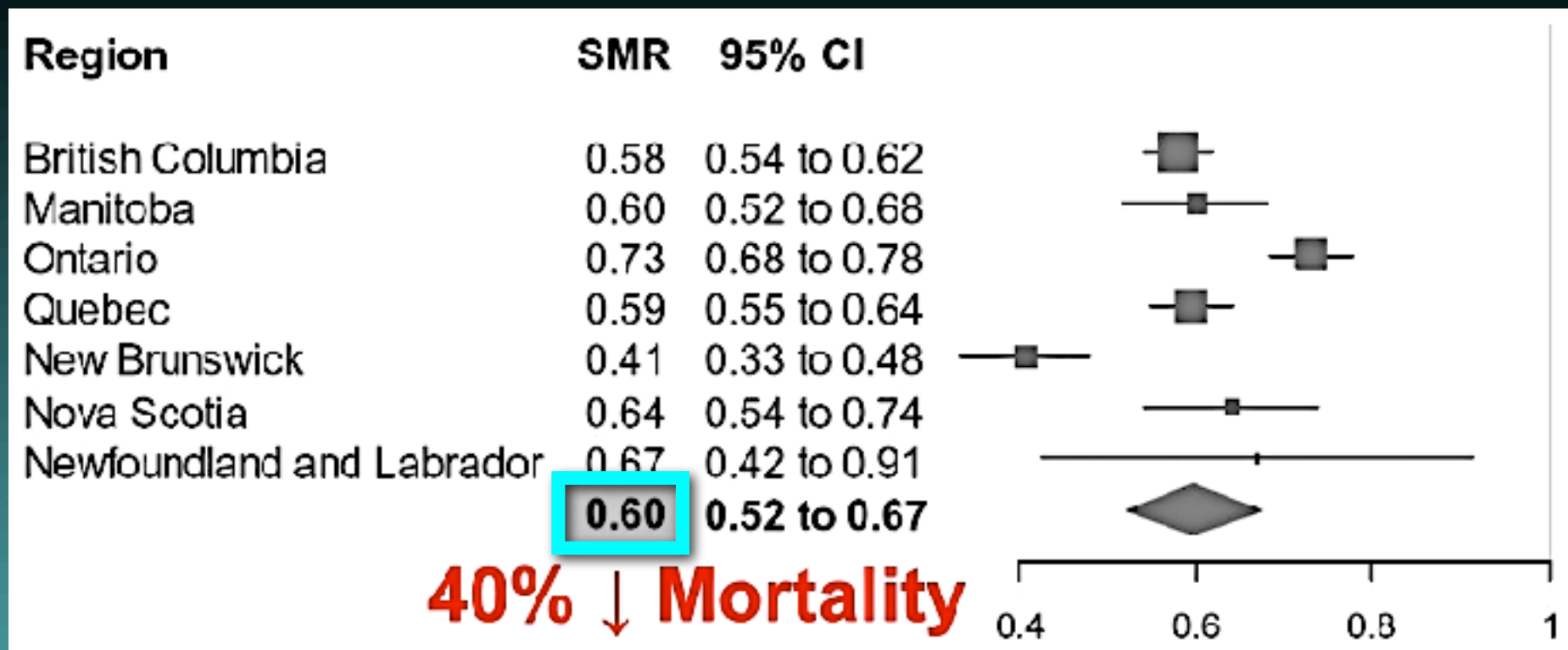
NEWS FLASH FROM CANADA:

OCTOBER 8, 2014!

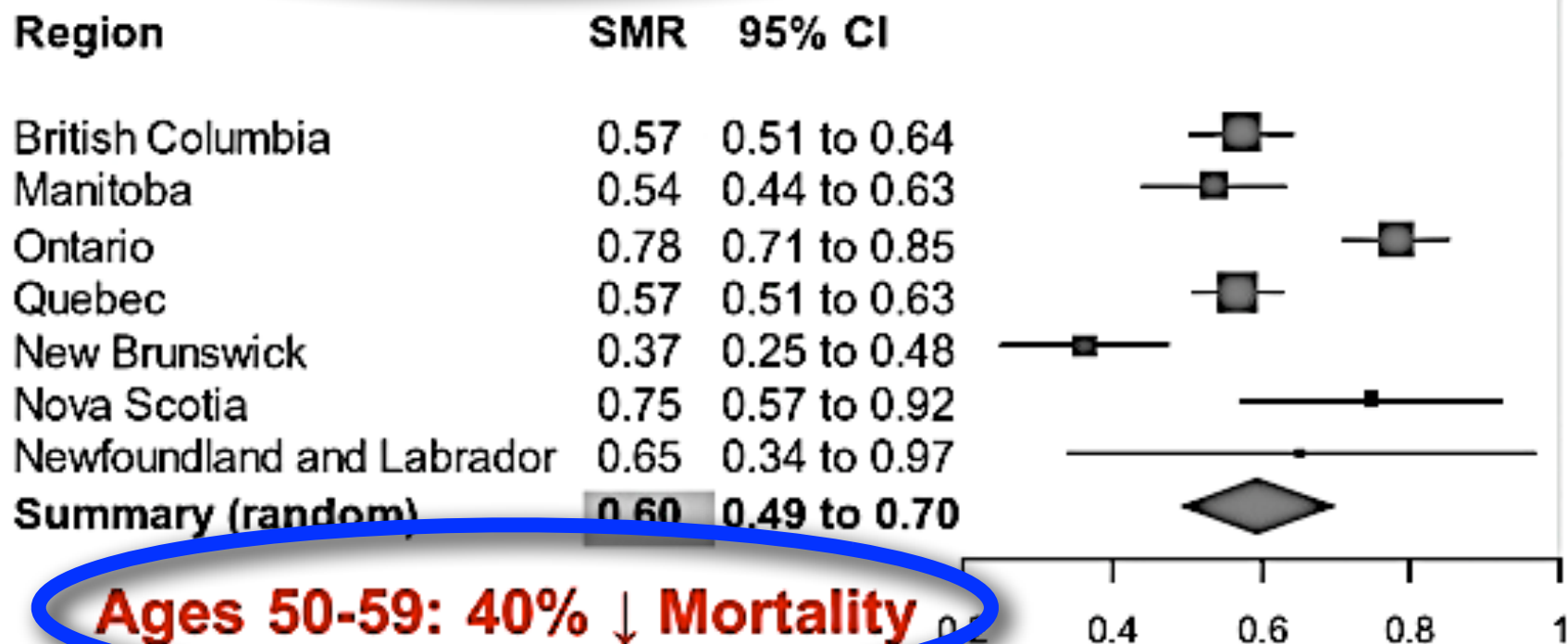
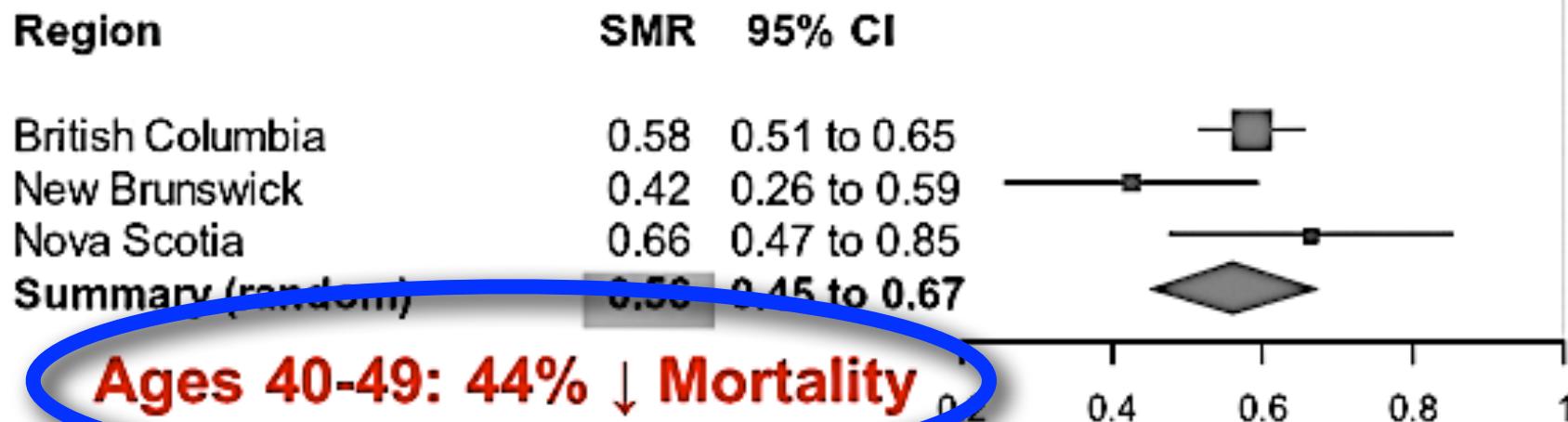
- **Results of 7 Canadian provincial screening programs published (85% of Canada Pop.)**
 - ➔ **3 Million women ages 40-74 screened in programs between 1990 & 2009**
 - ➔ **40% mortality reduction** in women participating in the programs
 - ➔ **Similar decrease in mortality seen in ALL AGE GROUPS!**

*-Coldman A, Phillips N, Wilson C, et al: Pan-Canadian Study of Mammography Screening and Mortality from Breast Cancer. **JNCI J Natl Cancer Inst** 2014; 106 (11): dju261

CANADIAN ORGANIZED SCREENING PROGRAM (40-75)



CANADIAN ORGANIZED SCREENING PROGRAM



AND-

RECENT ARTICLES FROM DR. TABAR:

**DUFFY S, TABAR L, YEN AMF, ET AL:
MAMMOGRAPHY SCREENING REDUCES
RATES OF ADVANCED AND FATAL BREAST
CANCERS: RESULTS IN 549,091 WOMEN**

Cancer: May 2020

<https://doi.org/10.1002/cncr.32859>

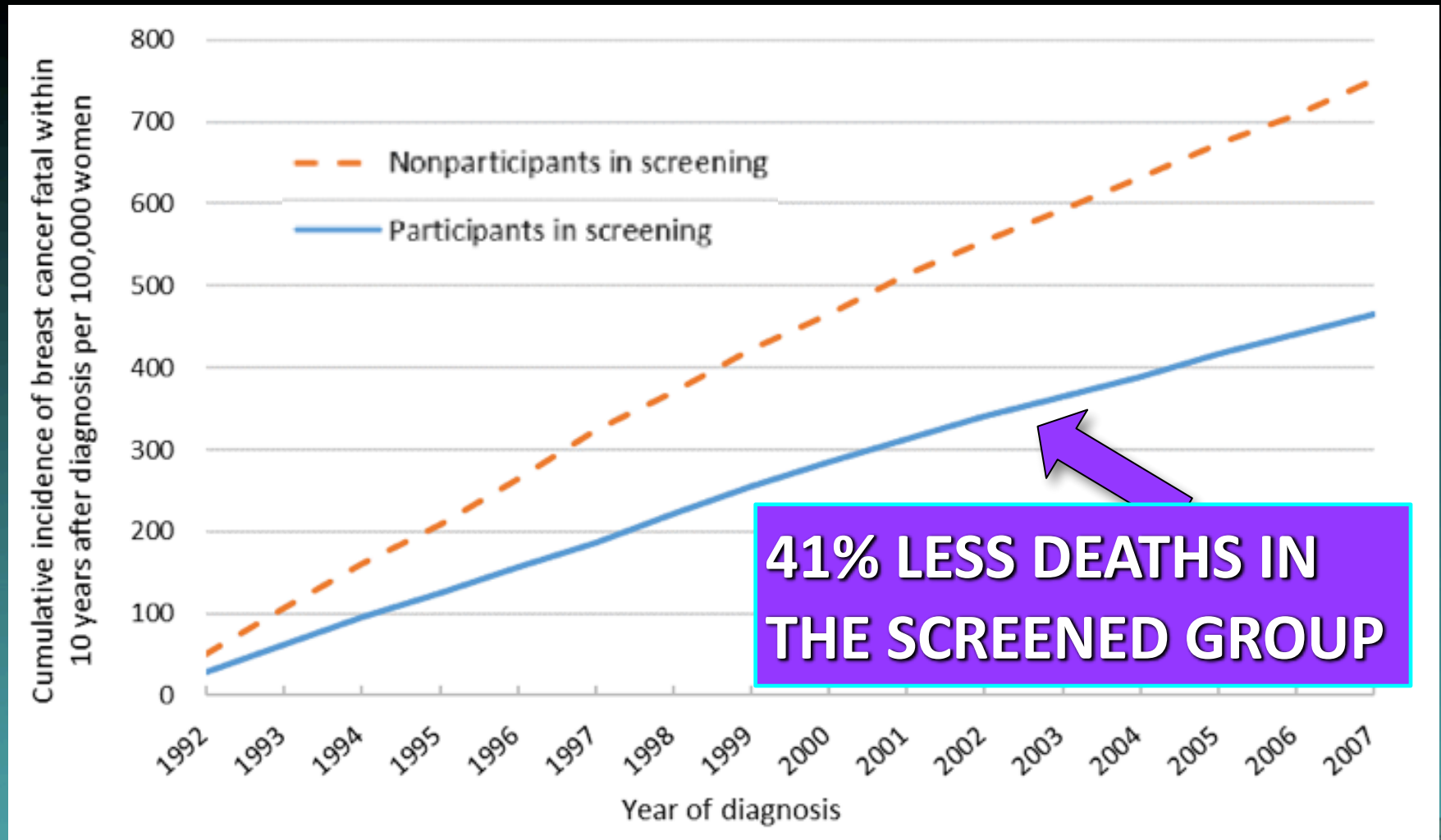




TABAR RECENT ARTICLE IN CANCER: MAY, 2020

- **550,000 WOMEN 40-69, EVALUATED 1992-2017**
- ➔ Evaluated the women who underwent screening mammography, and those who did not, in nine counties in Sweden (30% of Swedish population)
- ➔ **Collected data on all women who died of breast cancer within 10 years of diagnosis**
- ➔ **IF THEY HAD UNDERGONE SCREENING MAMMOGRAPHY, 41% LESS WOMEN DIED OF BREAST CANCER WITHIN 10 YEARS, AND THERE WERE 25% LESS ADVANCED CANCERS!**

CUMULATIVE INCIDENCE OF BREAST CANCER FATAL WITHIN 10 YEARS AFTER DIAGNOSIS



AND-

ANOTHER ARTICLE FROM DR. TABAR:

DUFFY S, TABAR L, YEN AMF, ET AL:

**BENEFICIAL EFFECT OF CONSECUTIVE
SCREENING MAMMOGRAPHY EXAMINATIONS
ON MORTALITY FROM BREAST CANCER**

Radiology 2021;299:541-547

**(AWARDED THE ALEXANDER MARGULIS
PRIZE AS THE BEST SCIENTIFIC ARTICLE
OF 2021 BY THE RSNA)**

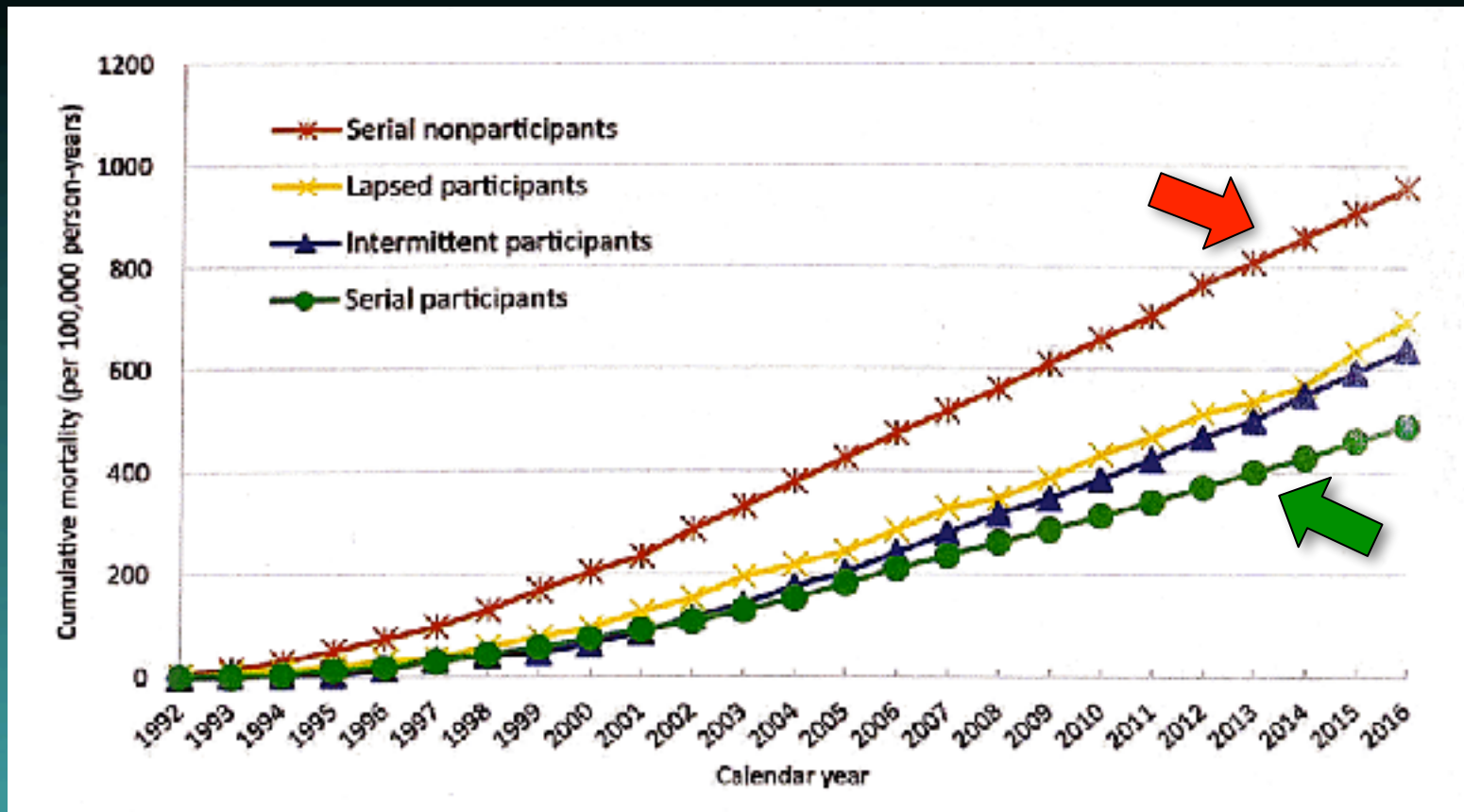




RECENT STUDY SHOWS VALUE OF REGULAR SCREENING MAMMOGRAMS

- 550,000 WOMEN DIVIDED INTO FOUR GROUPS, BASED ON PARTICIPATION IN SCREENING
 - ➔ Those who completed both of last 2 screens
 - ➔ Those who missed their last exam
 - ➔ Those who missed the exam before the last
 - ➔ Those who completed no exams
- In the group who completed **BOTH** exams, there were **49% LESS DEATHS** from breast cancer, compared to those who had **NO** exams

YEARLY* screening beginning at **age 40** saves the most **LIVES!**



(*- SCREENED EVERY 12-18 MONTHS IN SWEDEN)

DUFFY SW, TABAR L, ET AL. RADIOLOGY 2021;299:541-547



U.K. AGE TRIAL

Effect of mammographic screening from age 40 years on breast cancer mortality (UK Age trial): final results of a randomised, controlled trial



Stephen W Duffy^a, Daniel Vulkan^a, Howard Cuckle, Dharmishta Parmar, Shama Sheikh, Robert A Smith, Andrew Evans, Gleg Blyuss, Louise Johns, Ian O'Ellis, Jonathan Myles, Peter D Sasieni^a, Sue M Moss^a



Summary

Background The appropriate age range for breast cancer screening remains a matter of debate. We aimed to estimate the effect of mammographic screening at ages 40–48 years on breast cancer mortality.

Methods We did a randomised, controlled trial involving 23 breast screening units across Great Britain. We randomly assigned women aged 39–41 years, using individual randomisation, stratified by general practice, in a 1:2 ratio, to yearly mammographic screening from the year of inclusion in the trial up to and including the calendar year that they reached age 48 years (intervention group), or to standard care of no screening until the invitation to their first National

Lancet Oncol 2020

Published Online

August 12, 2020

[https://doi.org/10.1016/S1470-2045\(20\)30398-3](https://doi.org/10.1016/S1470-2045(20)30398-3)

See Online/Comment

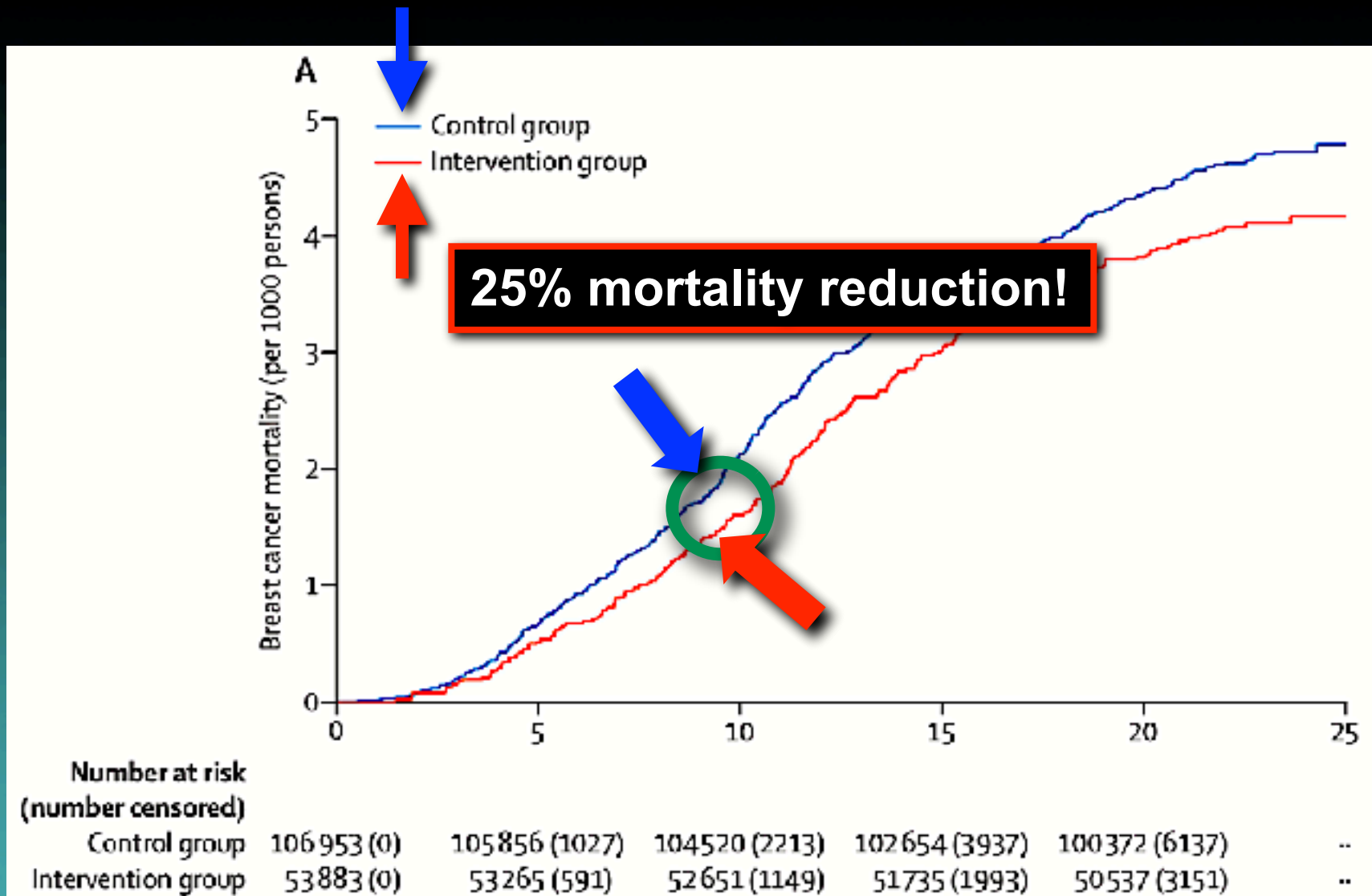
[https://doi.org/10.1016/S1470-2045\(20\)30428-9](https://doi.org/10.1016/S1470-2045(20)30428-9)

25% LESS DEATHS IN THE SCREENED GROUP AFTER 10 YEARS

DUFFY SW, ET AL. LANCET ONCOL 2020 [https://doi.org/10.1016/S1470-2045\(20\)30398-3](https://doi.org/10.1016/S1470-2045(20)30398-3)



U.K. AGE TRIAL: CANCER MORTALITY





SUMMARY OF ISSUES WITH USPSTF RECOMMENDATIONS

● THEY DID NOT:

- Include any of the organized screening data from around the world
- Include any breast cancer professionals on the Task Force
- Calculate harm-to-benefit ratio: value judgement!
- Include the most recent RCT data
- Correctly analyze their own CISNET data!

THEY TWISTED & IGNORED THE TRUE FACTS!



SUMMARY OF ISSUES WITH USPSTF RECOMMENDATIONS

● THEY DID NOT:

- Include any of the organized from around the world
- Include any of the Task Force
- Call for a value judgement!
- Include recent RCT data
- Correctly analyze their own CISNET data!

**IT IS ALL ABOUT THE MONEY:
WOMEN'S LIVES ARE NOT
"WORTH IT"!**

THEY TWISTED & IGNORED THE TRUE FACTS!



SUMMARY OF ISSUES WITH USPSTF RECOMMENDATIONS

● THEY DID NOT:

- Include any of the organized data from around the world
- Include any data from the Task Force
- Calculate the ratio: value judgement!
- Include recent RCT data
- Correctly analyze their own CISNET data!

**THEY WERE SAVING
MAMMOGRAMS, AND
NOT SAVING LIVES!**

THEY TWISTED & IGNORED THE TRUE FACTS!



IN SUMMARY:

- THERE IS **UNDENIABLE PROOF** FROM RCT STUDIES ON OVER **500,000 WOMEN, AND IN THE ORGANIZED SCREENING PROGRAMS INVOLVING MILLIONS MORE WOMEN, THAT SCREENING MAMMOGRAPHY SAVES LIVES!**

(ONE OF THE GREATEST MEDICAL ACHIEVEMENTS OF THE 20TH CENTURY)

➔ **HOWEVER, it must be performed YEARLY BEGINNING AT AGE 40 to be most effective**

**ONE PERSON
CAN MAKE A
DIFFERENCE!**





**“I believe that one of the greatest benefits
from my x-rays will be for screening
mammography, particularly for women
aged 40-49 years.”**

Wilhelm K. Roentgen, 1895



Courtesy Stephen Feig, MD



“This benefit may not be appreciated initially by those with limited understanding of medicine, but eventually it will be appreciated by all.”

Wilhelm K. Roentgen, 1895



Courtesy Stephen Feig, MD





FIVE KEY POINTS TO REMEMBER

- **Screening mammography has resulted in at least a 40% decrease in breast cancer deaths**
- **Randomized controlled trial (RTC) data grossly underestimate the true benefit of screening**
- **The “Canadian” RTC was not randomized, not controlled, and was basically a medical FRAUD.**
- **USPSTF cherry-picked the data, overexaggerated the “harms” of screening, & never even considered the harms of NOT screening!**
- **Mammography saves the most lives when done YEARLY, beginning at AGE 40!**

**QUESTIONS OR
INFORMATION, or COPIES OF
MY PPT TALK:**

**Email address:
MAMMOMIKE@AOL.COM**



**HELPFUL BOOK
FOR YOU AND
YOUR PATIENTS**

**GOOD
CHAPTER ON
SCREENING
GUIDELINES!**

The
Breast
Test
Book

A WOMAN'S GUIDE TO
MAMMOGRAPHY AND BEYOND

Connie Jones, MD
WITH MICHAEL N. LINVER, MD



Thank you!