Screening Mammography

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Screening Mammography

- Breast Cancer Statistics
- United States Preventative Services Task Force (USPSTF) Study
- Barriers to Mammography
- Overcoming Barriers to screening mammography

Breast Cancer Statistics

- Most common cancer in women
- 232,340 new cases of invasive breast cancer will be diagnosed in women in 2013
- 64,640 new cases of noninvasive
- 39,620 deaths due to breast cancer

Cancer Incidence

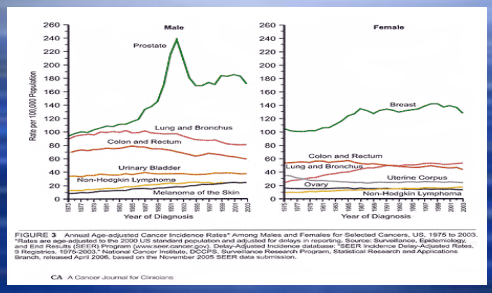
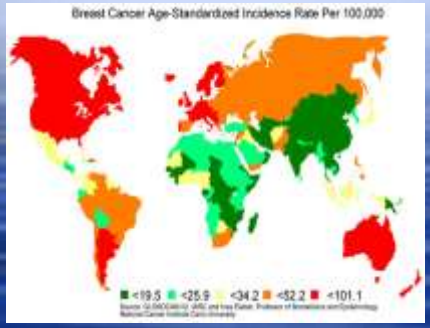


FIGURE 3 Annual Age-adjusted Cancer Incidence Rates* Among Males and Females for Selected Cancers, US, 1975 to 2003. *Rates are age-adjusted to the 2000 US standard population and adjusted for delays in reporting. Source: Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov). Delay-Adjusted Incidence database: SEER Incidence Delay-Adjusted Rates, 1975-2003, National Cancer Institute, DCCPS, Surveillance Research Program, Statistical Research and Applications Branch, released April 2006, based on the November 2005 SEER data submission.

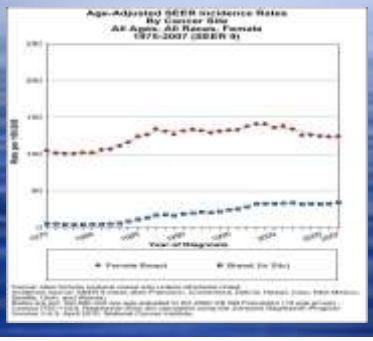
CA A Cancer Journal for Clinicians

Incidence of Breast Cancer

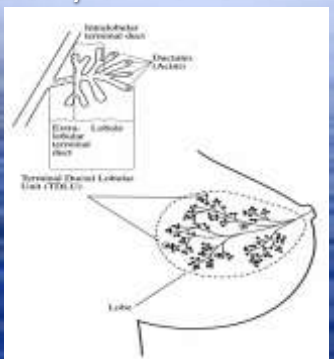
Incidence of breast cancer



Incidence of Breast Cancer

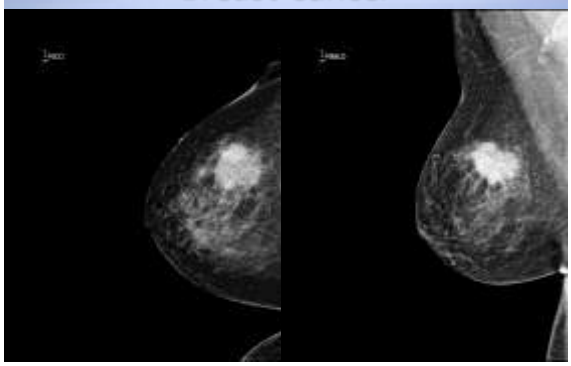


Anatomy of the Female Breast



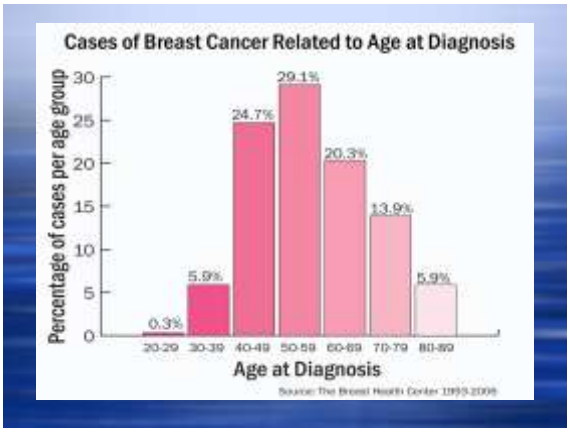
Spectrum of Breast Cancer

Breast Cancer



Risks for Developing Breast Cancer

- Advancing age
- Family history
- BRCA I & BRCA II
- Personal history of breast cancer
- Previous radiation to the chest
- Proliferative lesions with atypia (ADH & ALH)
- LCIS



Risks for Developing Breast Cancer

- Having children
- Breast feeding
- Alcohol
- Being overweight or obese
- Physical activity

But Remember….

- The majority of women with breast cancer have no family history of breast cancer.

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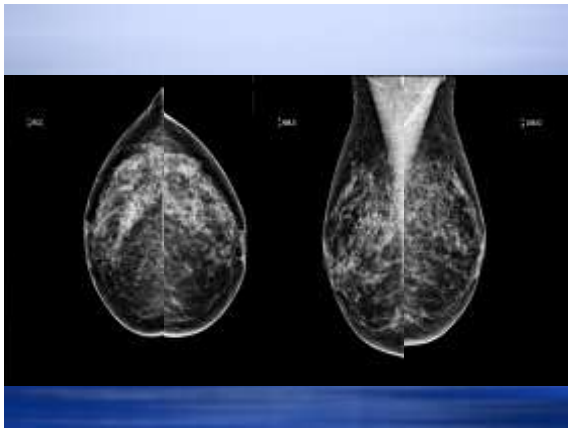
Screening Mammogram

- Healthy population
- Two views (images) of both breasts
- Regulated by the FDA



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United States Preventive Services Task Force

- Dropped support for screening mammography women age 40-49
- Biennial instead of annual screening for women aged 50-74 years
- Recommended not teaching breast self exam

USPSTF

- Impact of false positive studies
- Radiation exposure from the mammogram
- Physical harm
- Psychological harm
- Inconvenience

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Barriers to Screening Mammography

Why not to have a mammogram

Harms of Screening Mammography

- Physical harm
- Psychological harm
- Additional studies & biopsies
- Inconvenience
- Radiation Exposure

Physical Harm

- Good compression does cause pain (discomfort?)
- Very few women consider pain a deterrent from further screening mammography
- Pain can be minimized by timing mammogram with the menstrual cycle and empathetic technologists

Pain in Life

- Dental visits
- Getting a flu shot
- Having a colonoscopy
- Losing a friend to breast cancer
- Getting up at 5:00 am to workout

"Your Immediate Happiness is Secondary to the Goal" ~Snype Myers~

Psychological Harm

- If a patient is given negative results clearly, then there is minimal anxiety
- For those who are recalled, studies are "mixed": Some studies showed transient anxiety, others showed no difference compared to women with negative screening mammogram

Other Causes of Anxiety and Distress in our Lives

- Managing a household, working full time, minding children, pets & extended family members
- Airplane Turbulence
- Public Speaking

Additional Studies & Biopsies False Positive Results

- If 1000 women are screened, approximately 80 will be recalled for additional evaluation
- Out of the 80 recalled, 45 will need a few extra images or an ultrasound
- 20 out of the 80 will need to return in 6 months just to be careful
- 15 will need a needle biopsy

Additional Studies & Biopsies False Positive Results

- There is a higher percentage of false positives with cervical cancer screening yet there are only 11,000 new cases of invasive cervical cancer each year and 5000 deaths

Other Causes of False Positives in Our Lives

- Blood tests, such as an abnormal PSA
- Being pulled aside for a full body check in the airport security screening line

Inconvenience

Radiation Exposure

- Major efforts have dramatically lowered the doses used for mammography
- Radiation risk is age related
- At the age of 40 there is no direct evidence of any radiation risk to the breast from mammography

Relative Radiation

Mammogram	0.3-0.6 mSV
Transcontinental Flight	0.4 mSv
Natural Background Radiation	3 mSv annually
Living at high altitude-Denver	10 mSv annually

Radiation Causes Breast Cancer

- Millions of mammograms have been performed since the 1980's
- If radiation from mammograms caused breast cancer then there should be and increase in the incidence of breast cancer
- BUT the incidence of breast cancer is decreasing

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Screening Mammography

Breaking Down Barriers

Benefits of Screening Mammography

Breast cancer mortality can be reduced through screening mammography

Swedish Two-County Trial: Impact of Mammographic Screening on Breast Cancer Mortality during 3 Decades

Radiology: Volume 260 Number 3 September 2011
Tabar et al

Radiology: September 2011

- Large Study: 133,065 women
- Long term: 29 years
- Randomized into screening mammography & a control group
- Rigorous methodology

Radiology: September 2011

- Highly significant reduction in breast cancer mortality in women invited to screening
- Those who had regular screening mammograms are 31% less likely to die of breast cancer over 29 years.

United States Preventative Screening Task Force Screening Mammography Recommendations: Science Ignored

American Journal of Roentgenology: Volume 196 Number 2 February 2011
Hendrick & Helvie

AJR: February 2011

- Used data the task force considered
- Found that if women begin mammograms at age 40 then breast cancers deaths are reduced by 40%
- If USPSTF guidelines followed the reduction of breast cancer death is 23%

AJR: February 2011

- If USPSTF guidelines are followed then 99,829 lives would be lost

Effects of mammography screening under different screening schedules: model estimates of potential benefits and harms

Ann Intern Med 2009; 151:738-747
Mandelblatt, Cronin, Bailey

Mammography screening: a new estimate of number needed to screen to prevent one breast cancer death

AJR Am J Roentgenol 2012:198:723-728
Hendrick & Helvie

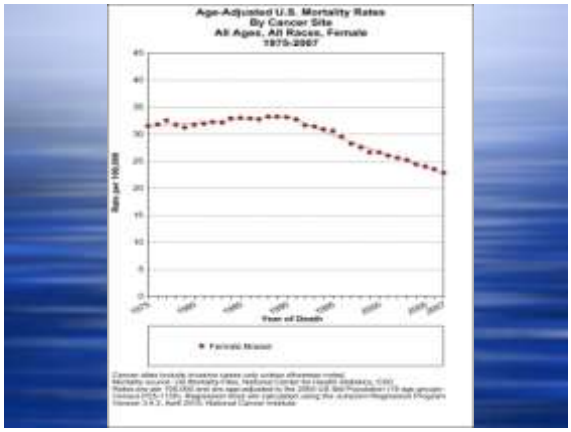
Additional mortality reduction ?

70.7 %

Screening Mammography Guidelines

- Annual mammograms beginning at age 40
- Earlier if there is a first degree relative with breast cancer
- Above supported by the American Cancer Society, American College of Radiology, American College of Surgeons, and American College of Obstetrics & Gynecology

Screening Mammography Reduces Lives lost to Breast Cancer



Screening Mammography Benefits

- Screening mammography can detect small tumors before they can be felt on physical
- Tumors that are detected at an early state are more likely to be successfully treated

Screening Mammography Benefits

- When a cancer is smaller less extensive surgery can be performed with better cosmetic results
- It is much less expensive to care for a woman with an early stage breast cancer than one with an advanced stage breast cancer
- Better outcomes for patient & family

Benefits of Screening Mammography

- When a young patient dies of breast cancer the family loses a wife, mother, caretaker to her parents and a productive member of the workforce & society
- Family and society lose

Barriers to Screening Mammography

- There are barriers in screening but there are barriers to any other test in medicine
- Barriers of NOT screening pale in comparison
- Early and tragic death from a breast cancer would seem to be the ultimate barrier than all the other barriers combined

Summary

- Screening Mammography saves lives
- Attacks on mammography should cease and efforts made to build on its success
- Major health care advance and women should not be denied access to its benefits

Special Thanks

Deborah L. Day, M.D.
John J. Nicotra, M.D.

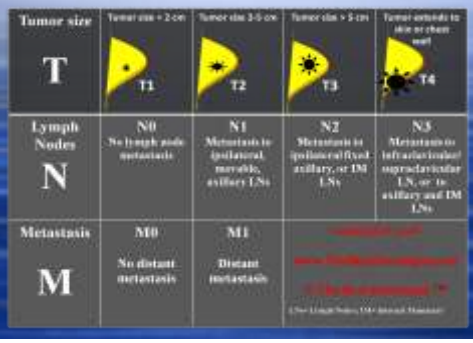
Hormone Therapy in Menopause: Pros

- Lowers risk of osteoporosis & fractures
- Lowers risk of diabetes
- Lowers risk of colon cancer
- Reduces hot flashes & night sweats
- Reduces mood swings
- Prevents vaginal atrophy
- May lower CV risks in healthy women

Hormone Therapy in Menopause: Cons

- Increases risk of stroke
- Increases risk of pulmonary embolism
- Increases risk of heart disease in older women
- Increases risk of breast cancer, with progestin
- Increases risk of dementia after age 65
- May increase breast tenderness

Breast Cancer Staging



5 Year Survival

Stage	5 Year Relative Survival Rate
0	100%
I	100%
IIA	92%
IIB	81%
IIIA	67%
IIIB	54%
IV	20%