

Breast Cancer Screening

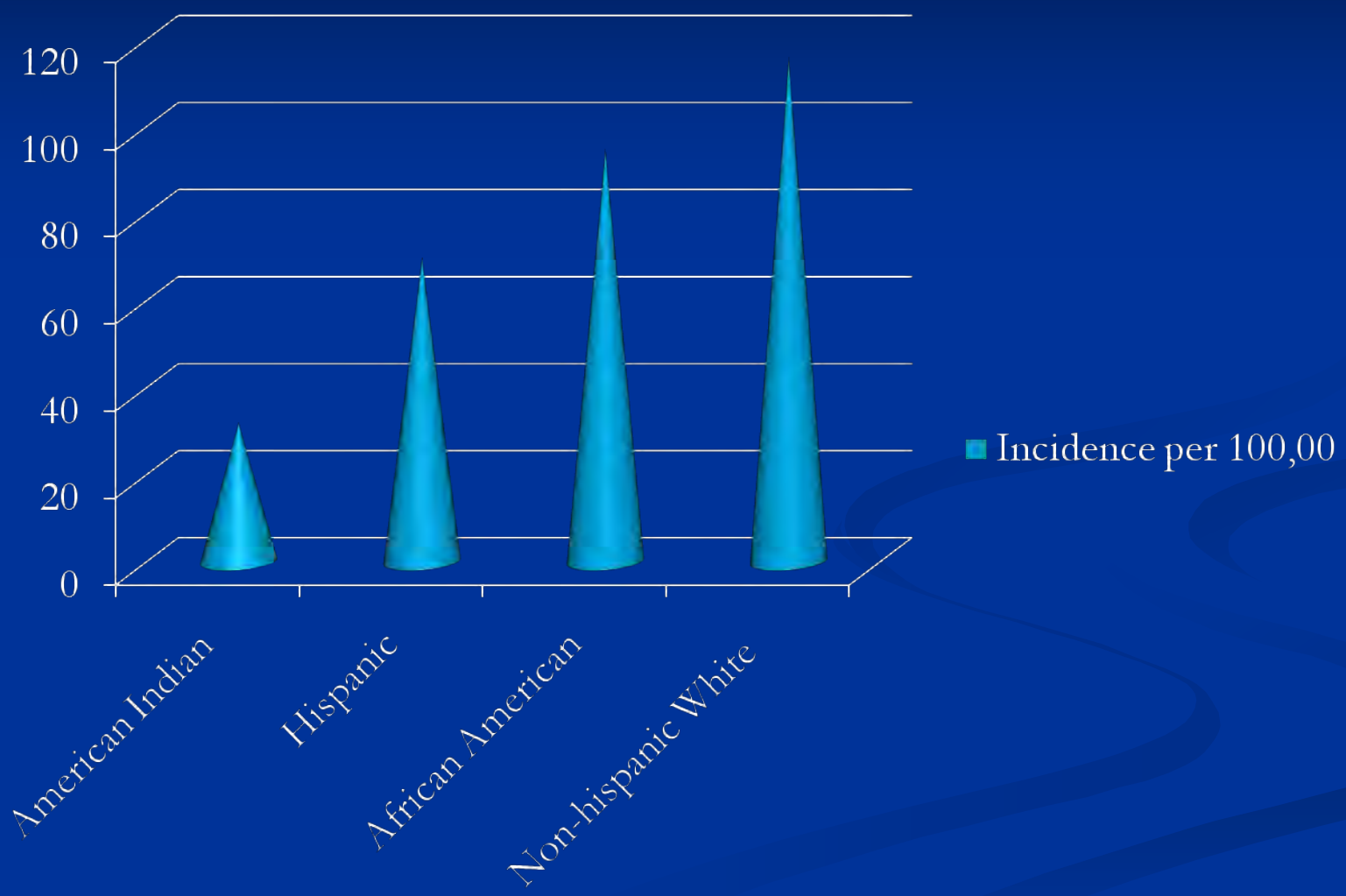
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Objectives

- Discuss differences in malignant breast disease in the American Indian/Alaska Native population vs. the general population
- Discuss Tillman / Myers study
- Discuss how to improve mammography screening and GPRM mammography rates



Incidence of Breast Cancer in United States



Compared with other ethnic/racial groups in the United States, AI/AN women have:

- the lowest incidence of breast cancer
- the lowest breast cancer survival rate or any ethnic group in U.S.

Tillman & Myers Study

Status of Patients at Presentation

- 21% abnormal mammogram
- 68% palpable mass
 - Patient discovered the mass herself 89%
 - Healthcare provider found the mass 11%
- 11% evidence of advanced disease

Tillman, Myers, et. al. *Breast Cancer in Native American Women Treated at an Urban-based Indian Health Referral Center 1982-2003*. *Am J Surg* 190 (2005) 895-902

Tillman & Myers Study: Status of PIMC Patients at Presentation

- 68% had one or more co-morbid condition and almost 1/3rd were diabetic *Co-morbid disease had no correlation with tumor size or stage
- History of any hormone use was significant
*Hormone use correlated with smaller tumor size at diagnosis (p=0.003)

Status of PIMC Patients at Presentation

- Over 80% were overweight or obese (increased risk of regional or metastatic disease - more serious disease - with higher BMI)
- 42.9% of overweight and 59% of obese patients ($p=0.019$) had more serious disease at presentation

80% of normal BMI patients had in situ or local disease (less serious) at presentation

Patient Outcomes

- Average age at diagnosis was 54

Nationally, average age at diagnosis is 64

- Average tumor size at diagnosis was 3.3 cm

Nationally, average tumor size is about 2 cm

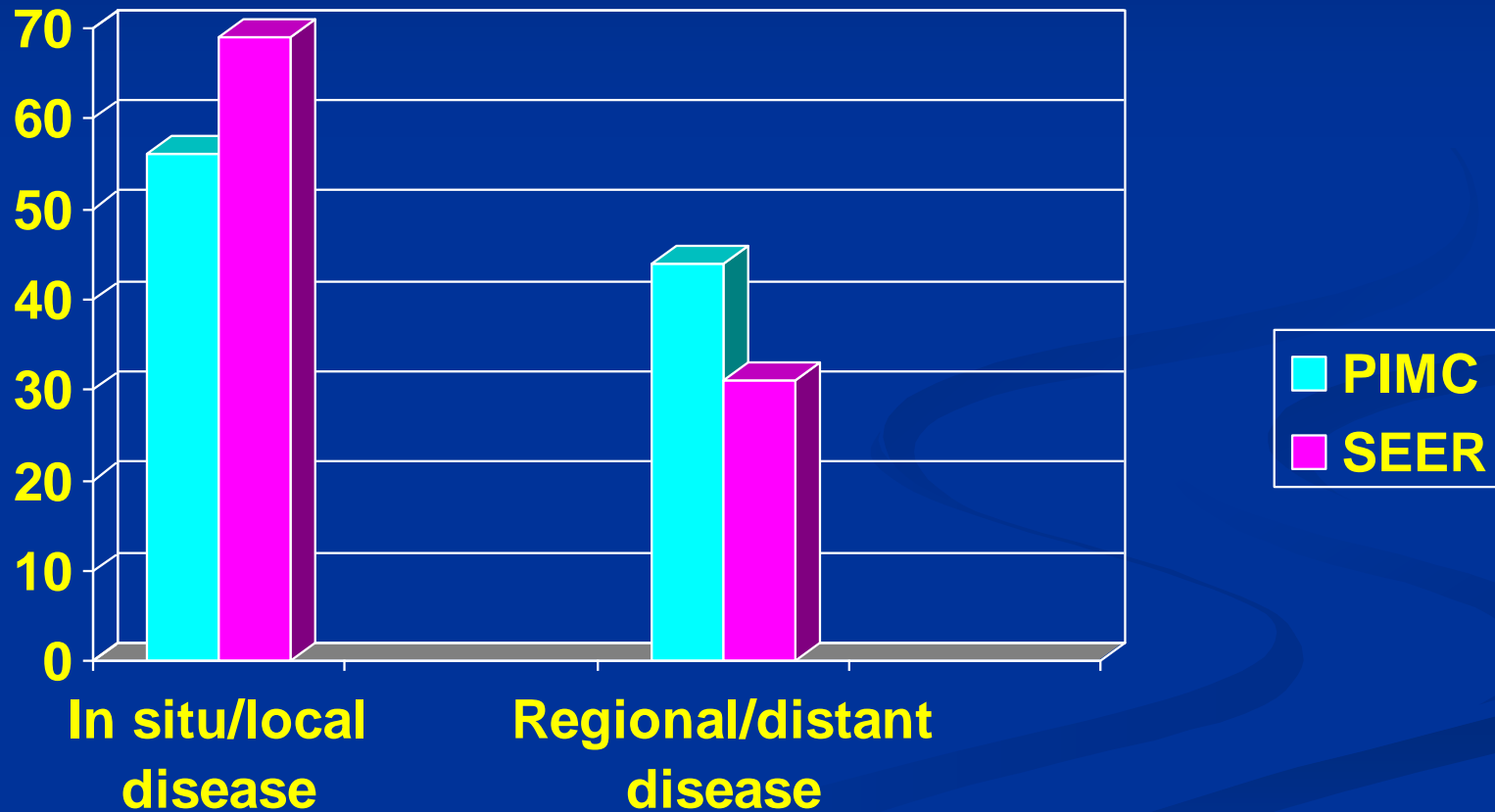
Why are we diagnosing patients at a later stage?

- We have lower screening rates
- Our patients and providers may have the misconception that breast cancer is rare in the Native population

Why are we diagnosing patients at a later stage?

- One study found that only 1/3rd of Native diabetic women aged 50-69 and living in Phoenix had ever had a mammogram, despite having a co-morbid condition for which they were seeing a healthcare provider
- Not all of the IHS hospitals or larger clinics have fixed mammography units

5-year survival for PIMC patients 62%; compared to 86% nationally - why?



Tillman, Myers, et. al. *Breast Cancer in Native American women treated at an urban-based Indian health referral center 1982-2003*. Am J Surg 190 (2005) 895-902

AI/AN women in Tillman's Study:

- Presented at later stage of malignancy
 - Were more likely to undergo mastectomy
 - Had greater delays to seeking treatment
- * This data suggests a need for increased breast cancer education for AI/AN women and their providers to facilitate earlier detection and adequate treatment

Effects of lower screening rates

From 1992 to 2002, death rates in the from breast cancer in the U.S. declined annually by:

- 2.4% for whites
- 1.8% for Hispanics
- 1.0% for African Americans and Asian Americans
- 0% for AI / AN

Mammography Screening

- Mammography is the best way to detect breast cancer in its earliest, most treatable stage—it takes an average of 1-3 years before a woman can feel a lump.
- Mammography detects cancers too small to be felt during a clinical breast examination (CBE).
- Mammography detects an average of 90% of breast cancers in women without symptoms!

Regular mammography screening reduces breast cancer mortality rates

- Since the 1980's, thanks to more widespread use of mammography and improved treatment, over-all breast cancer mortality rates in the United States have declined.
- Between 1990 and 2002, the U.S Breast cancer death rate declined 2.3% each year.

Regular mammography screening reduces breast cancer mortality rates

- One major review study found an average 24% percent mortality reduction associated with regular mammography screening (age ≥ 40).
- According to the CDC, regular screening of women ages ≥ 40 can reduce breast cancer mortality by approximately 16% overall, and up to 30% for women over age 50.

GPRA Mammography Measure

- Denominator: All active female clinical patients aged 52 through 64, without a documented bilateral mastectomy or two separate unilateral mastectomies.
- Numerator: Active female clinical patients with documented mammogram in the past two years.

Mammography Screening at IHS

The GPRA mammography screening rate by year:

- 2003: 40%
- 2004: 40%
- 2005: 41%
- 2006: 41%
- 2007: 43%
- 2008: 45%
- 2009: 45%
- 2010: 48%
- 2011: 49.8%
- 2012: 51.9%

Mammography Screening at IHS

- GPRA screening rates by site vary widely - some sites actually screen less than 20% of women who are => 50 years;
- The Healthy People 2020 mammography screening target is 81.1% of women aged => 40 years of age. No IHS site has a 81.1% GPRA mammography screening rate, even for women =>50 years!
- Screening rates correlate directly with tumor size at diagnosis – the lower the screening rate, the bigger the tumor!

CDC's MMWR Vol. 59 July 6, 2010

- MMWR Vital Signs: Breast Cancer Screening Among Women Aged 50-74 Years – United States, 2008
- According to BRFSS data: The mammography screening rate for U.S. women all races, aged 50-74 was 81.1%
- Among the lowest screening rates that were reported was for AI/AN women at 70.4%

How can we improve our mammography screening rates?

- According to the research, provider recommendation correlates with increased rates. Have your CAC set up a mammography EHR reminder.
- Send patient reminders to women due for a mammogram; if they do not respond, send CHR or PHN to educate and encourage screening;
- More convenient mammography access using mobile mammography vans,

How can we improve our mammography screening rates?

- Ultimately, mammography screening needs to be accessible to busy women:
 - Allow eligible women (50 yrs and over) to schedule their mammograms on demand, without a provider order;
 - Engage CHRs to transport high risk women without wheels (50 yrs and over);
 - Engage PHN & CHA to educate pts.

Provider recommendation is one of the strongest predictors of mammography use

- One study found that “the most frequent reason cited by women for failure to have mammography is that their provider did not recommend one.”
- Another study found that “94% of women whose provider had recommended mammograms had had one in the last 2 years, while only 36% of women whose provider had not made the recommendation had a mammogram.”

New U.S. Preventive Task Force Recommendations

- Biennial (every other year) screening mammography for women aged 50 to 74 years;
- Decision to initiate regular, biennial screening earlier is an individual one taking patient context into account, including patient values regarding benefits and harms;
- Recommends against the BSE;

New U.S. Preventive Task Force Recommendations

- Insufficient evidence of additional benefits or harms for:
 - screening mammography for women \Rightarrow 75 yrs;
 - CBE beyond screening mammography in women \Rightarrow 40 yrs;
 - of digital mammography or MRI

The GPRA Measure and the US Preventive Task Force Recommendations

- The new recommendations do not mean women can't be screened earlier
- Women can request earlier screening
- Clinicians can recommend earlier screening

**So your patient's screening
mammogram comes back
abnormal!**

Now what?

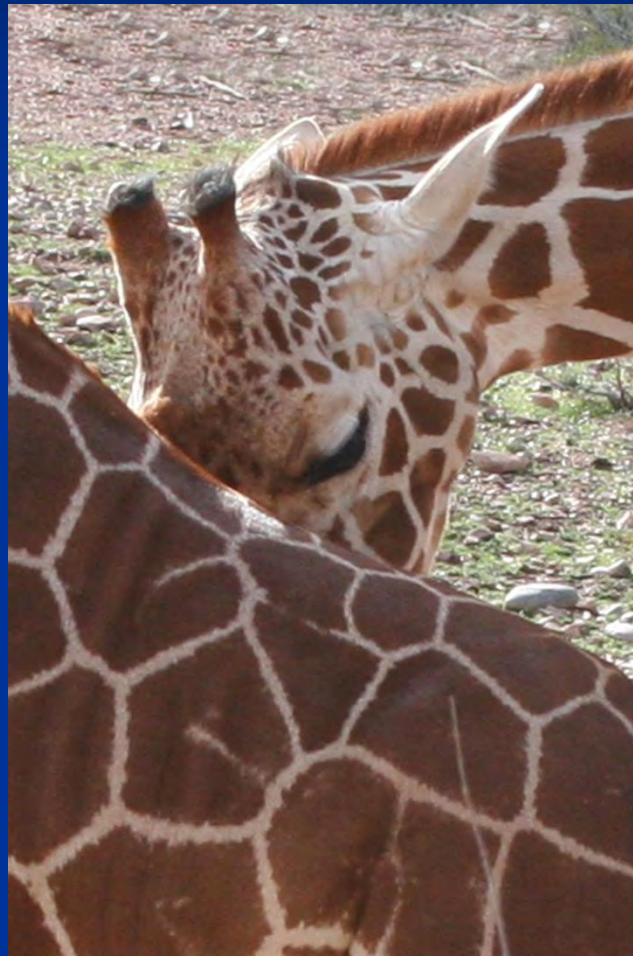


Spectrum of Breast Diseases:

Benign to Malignant

- **Benign breast conditions:** breast pain, fibrocystic disease, fibroadenoma, infections, male gynecomastia, ectopic breast tissue, nipple discharge
- **Conditions with increased risk of breast cancer:** atypical ductal hyperplasia, Lobular Cancer In-situ (LCIS), strong family history
- **Pre-malignant conditions:** Ductal Cancer In-situ (DCIS)
- **Malignant conditions:** Invasive breast carcinoma

Benign Breast Conditions

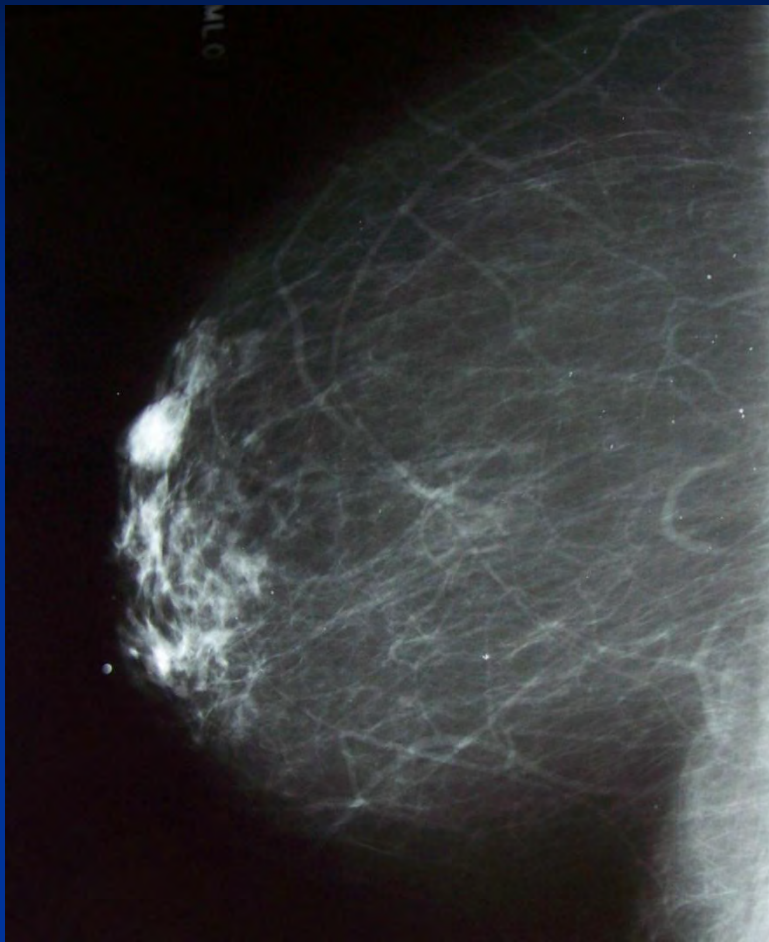


Breast Imaging Reporting and Data System (BIRADS)

<i>BIRADS</i>	<i>What it means...</i>
0	Assessment incomplete (need to review prior studies or obtain additional imaging)
1	Normal mammogram, continue routine screening
2	Benign finding, continue routine screening
3	Probably benign finding, rec. short term interval follow-up in 6 months
4	Suspicious abnormality, rec. biopsy
5	Highly suspicious for malignancy, rec. biopsy
6	Known biopsy-proven malignancy

43 y/o female presents to ER c/o right breast mass discovered on BSE

- PMHx: HTN, Type 2 DM, s/p cholecystectomy with no breast cancer risk factors identified
- Patient has never had mammogram or CBE (In a study from 2000, only 1/3rd of Native diabetic women living in Phoenix aged 50-69 had ever had a mammogram & less than 1/3rd had ever had a CBE, despite having a co-morbid condition for which they were seeing a healthcare provider!)
- Patient scheduled for mammograms and referred to breast clinic



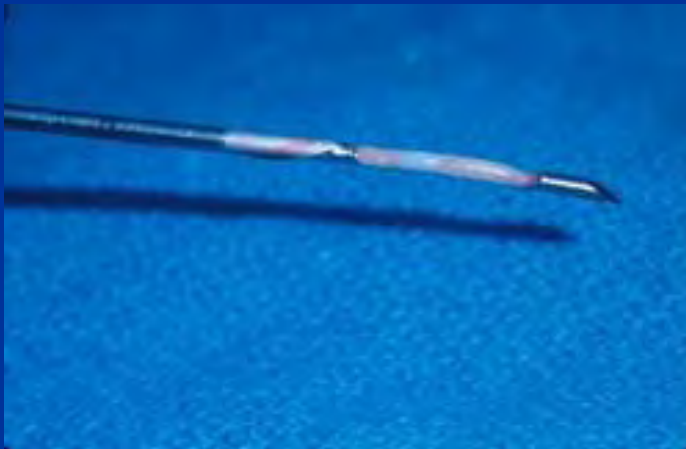
**Mammogram: smooth
round density, ultrasound
(BIRADS 0)**



**Ultrasound: lesion is
solid, wider than tall,
(BIRADS 3)**

Physical exam in breast clinic reveals a smooth, mobile 2 cm mass in the right breast.

- Imaging and exam are c/w fibroadenoma, but a solid breast mass in a patient over 40 (or other risk factors) needs tissue diagnosis to safely observe



Core biopsy confirms diagnosis of fibroadenoma, options of excision versus observation discussed with patient

Benign lesions can often be completely removed with image guided vacuum assisted biopsy; or excisional biopsy with periareolar incision



Patient opts for excision; lesion is excised completely under ultrasound guidance with vacuum assisted device

Benign nipple discharge

- In 2/3rd of non-lactating women fluid can be expressed from the nipple ducts
- Physiologic secretions can be white, yellow, green, brown; may be from multiple ducts and vary in color
- Blood in nipple discharge during pregnancy or lactation is benign, probably due to hypervascularity of developing breast tissue

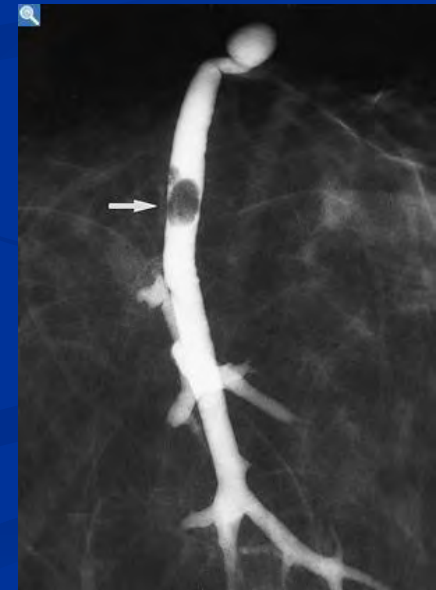
Galactorrhea

- Galactorrhea is *copious bilateral* milky discharge not associated with pregnancy or lactation
- Careful drug history for drugs such as OCPs, antihypertensives, or psychotropic agents that can cause hyperprolactinemia
- Elevated blood prolactin levels without drug cause should prompt evaluation for pituitary tumor

Nipple discharge

- Clear/serous or Bloody nipple discharge are only indications for galactography
- Greenish, grayish, TURBID = benign
- Straw colored, CLEAR ~ 6 % malignant
- BLOODY ~ 13 % malignant

Galactography shows a single filling defect; surgical excision of the duct reveals a benign papilloma



Paget's disease

- Eczema-like patch of irritated skin *starts at the nipple* and can spread onto areola
- Very rarely bilateral
- Will not improve with local treatment such as steroid creams
- Paget's is almost always a sign of an underlying malignancy, and treatment is that of the underlying disorder

Breast Cancer Screening

<i>Age</i>	<i>Breast Cancer Risk</i>	<i>Mammography</i>	<i>Clinical Breast Exam</i>	<i>Breast Self Exam</i>
20-39	Average	Not needed	Every 3 Years	Regular BSE Recommended
20-39	Average to High	Mammography or other imaging may be indicated	Yearly	Regular BSE Recommended
40 and older (while in good health)	Average to High	Every Two Years		Regular BSE Recommended

RISK FACTOR	RELATIVE INCREASE IN RISK
Mother/sister/daughter with breast cancer	2 X
2 first degree relatives with breast cancer	5 X
Personal history of breast cancer	3-4 X
Prior biopsy with atypical hyperplasia	4-5 X
Alcohol 2-5 drinks per day	1.5 X
Obesity	Increased risk
Early menses (≤ 12) or late menopause (≥ 55)	Slightly increased risk
Nulliparous or 1 st child after age 30	Slightly increased risk
HRT w/ estrogen and progesterone	Increased risk goes back to baseline 5 years after discontinuing tx

Lifetime risk is 1 in 8; but varies by age:

Decade of life	Risk of breast cancer
30-39	0.43 % (1 in 233)
40-49	1.44 % (1 in 69)
50-59	2.63 % (1 in 38)
60-69	3.65 % (1 in 27)

Breast Cancer Risk Assessment

Tool: Gail model

- Medical hx (age, number of prior breast biopsies, presence of atypical hyperplasia)
- Reproductive hx (age at 1st menses, age of 1st live birth)
- Family hx (breast cancer in a mother, sister or daughter)
- Calculates 5 year and lifetime risk compared to general population

Breast Cancer Risk Assessment Tool: Gail model

- May underestimate risk for some minority groups
- Has not been validated in AI/AN populations
- Risk Calculator is available on the NCI website: www.Cancer.gov/bcrisktool



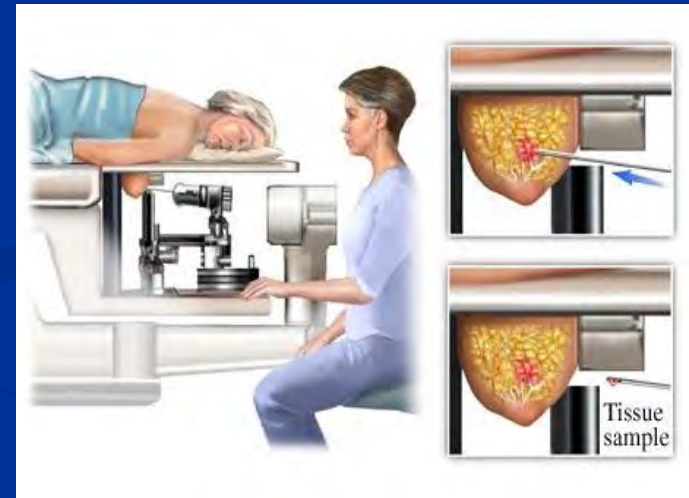
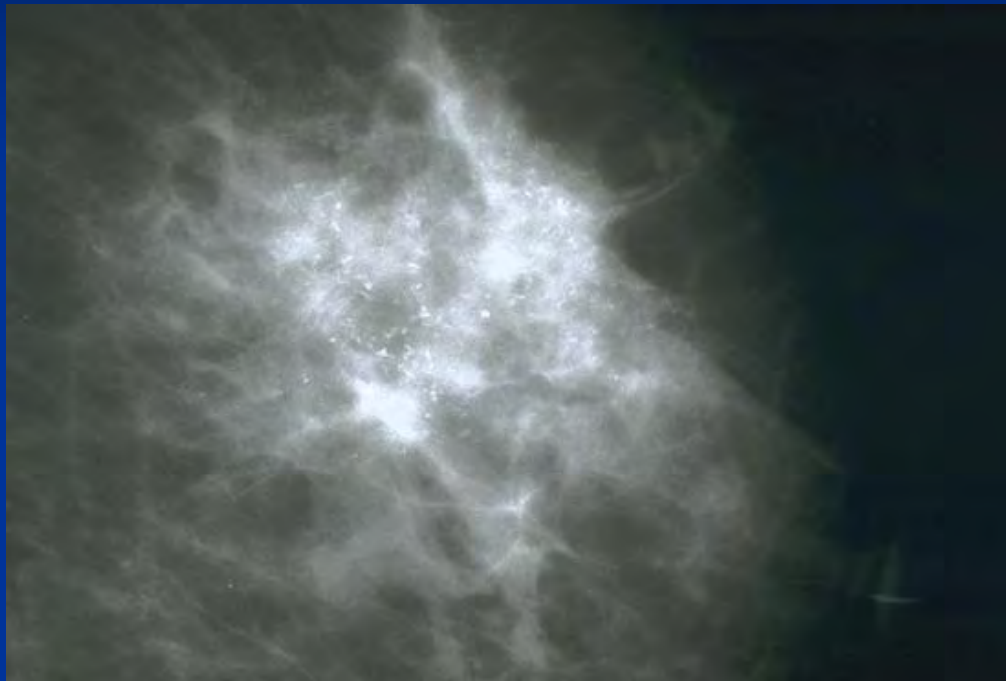
Genetic counseling

- Genetic counseling session estimates patients' probability of an inherited susceptibility, proceeding with genetic testing is then their choice
- Indications for referral:
 - ✓ Relative on *maternal or paternal* side of family with breast cancer under age 50
 - ✓ Breast and ovarian cancer in the family, esp. in the same individual
 - ✓ Male breast cancer in the family
 - ✓ Ashkenazi Jewish heritage

An inherited susceptibility accounts for only 5-10 % of breast cancers

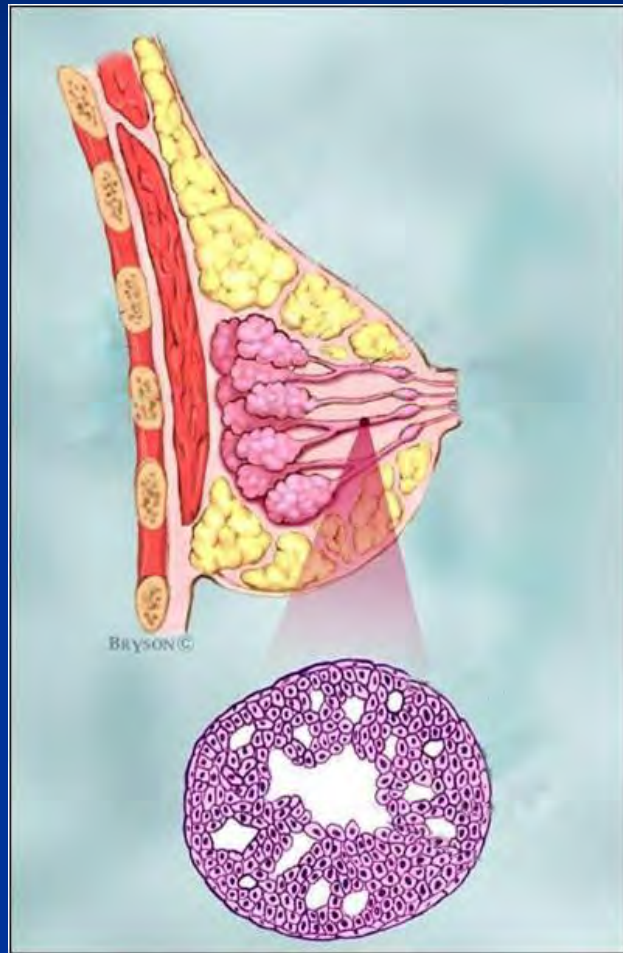
<i>Cancer type</i>	<i>Risk in BRCA 1 or 2 Carriers (Lifetime to age 70)</i>	<i>General Population Risk (Lifetime to age 70)</i>
Breast	40-85 %	8 %
Contralateral Breast	40-65 %	2-11 %
Ovarian	BRCA 1: 25-65 % BRCA 2: 15-25 %	1 %
Prostate	BRCA 1: Elevated BRCA 2: 19 %	8 %
Male breast	6-7 % (<10%)	0.1 %
Pancreatic	3-7 % (< 10%)	0.4 %

Mammogram with clustered microcalcifications



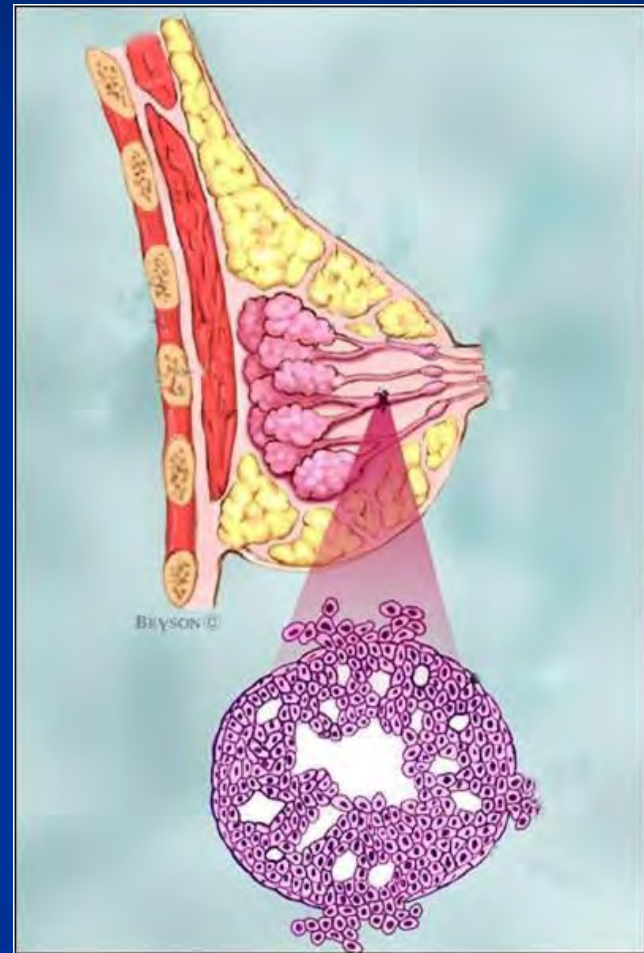
Patient sent for stereotactic biopsy which reveals ductal carcinoma in situ, ER+

Ductal Carcinoma In Situ

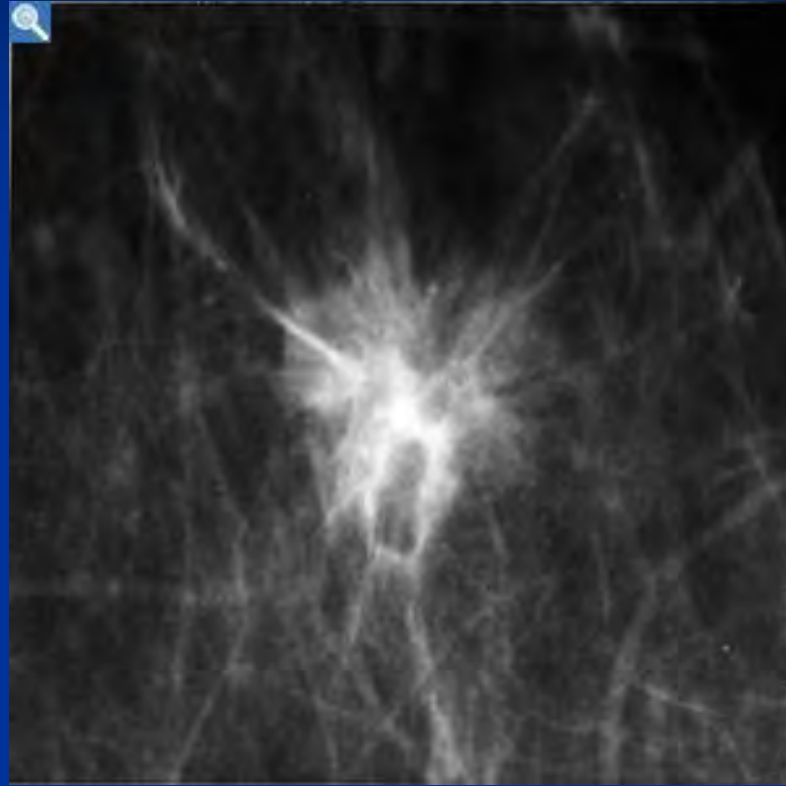


Vs.

Invasive Ductal Carcinoma



Mammogram:



Spiculated mass left breast, 2 cm, BIRADS 4

Breast cancer staging

<i>Primary Tumor</i>	<i>Definitions</i>
<i>Tis</i>	<i>Carcinoma in situ</i>
<i>T0</i>	No evidence of primary tumor
<i>T1</i>	Tumor 2 cm or less
<i>T2</i>	Tumor > 2 cm, < 5 cm
<i>T3</i>	Tumor more than 5 cm
<i>T4</i>	Any size tumor with direct extension into chest wall or skin; inflammatory carcinoma
<i>Regional Nodes</i>	
<i>N0</i>	No regional lymph node metastasis
<i>N1</i>	Metastasis in 1-3 axillary lymph nodes
<i>N2</i>	Metastasis in 4-9 axillary lymph nodes
<i>N3</i>	Metastasis in 10 or more axillary lymph nodes, Ipsilateral supraclavicular lymph nodes
<i>Distant Mets</i>	
<i>M0</i>	No distant metastasis
<i>M1</i>	Distant metastasis

Breast cancer staging

<i>Stage</i>	<i>Definition</i>	<i>5 year Relative Survival Rate</i>
0	Tis N0 M0	100 %
I	T1 N0 M0	100 %
IIA	T0-1 N1 M0 T2 N0 M0	92 %
IIB	T2 N1 M0 T3 N0 M0	81 %
IIIA	T0-2 N2 M0 T3 N1-2 M0	67 %
IIIB	T4 N0-2 M0	54 %
IV	Any T any N M1	20 %

Summary

- Most breast disease is benign!!
- Rigorous screening practices will improve survival in our population by catching disease at earlier stages

