



# Breast Cancer

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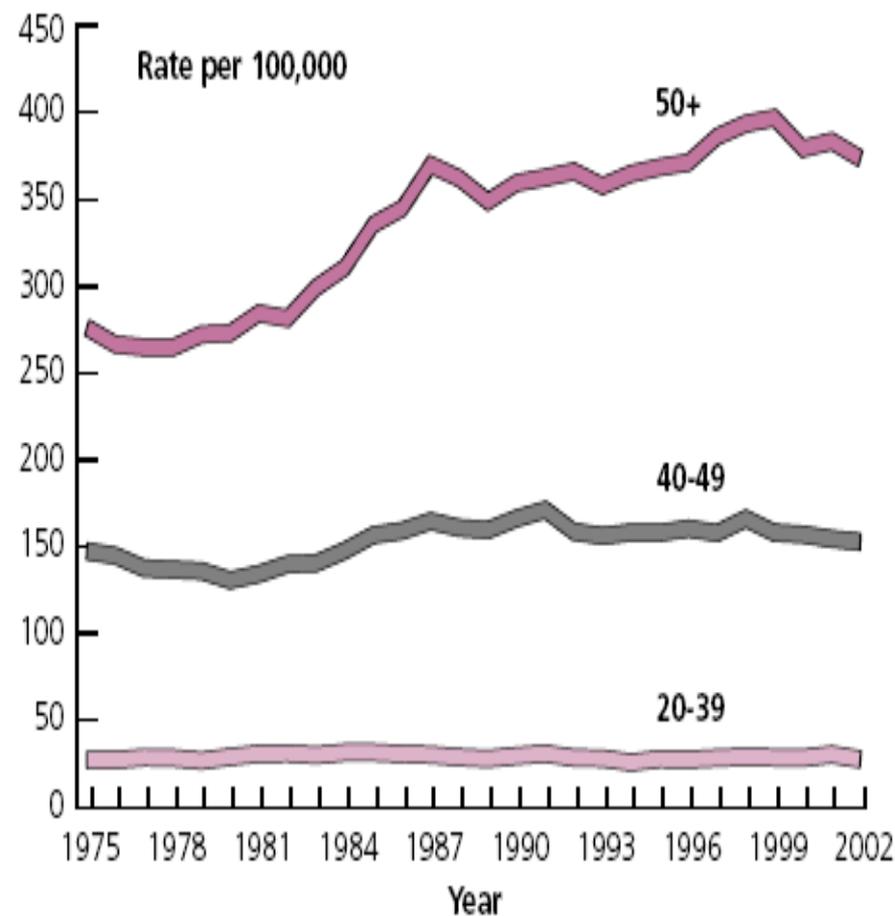
with help from NPCR presentation 2006

# Breast Cancer Facts

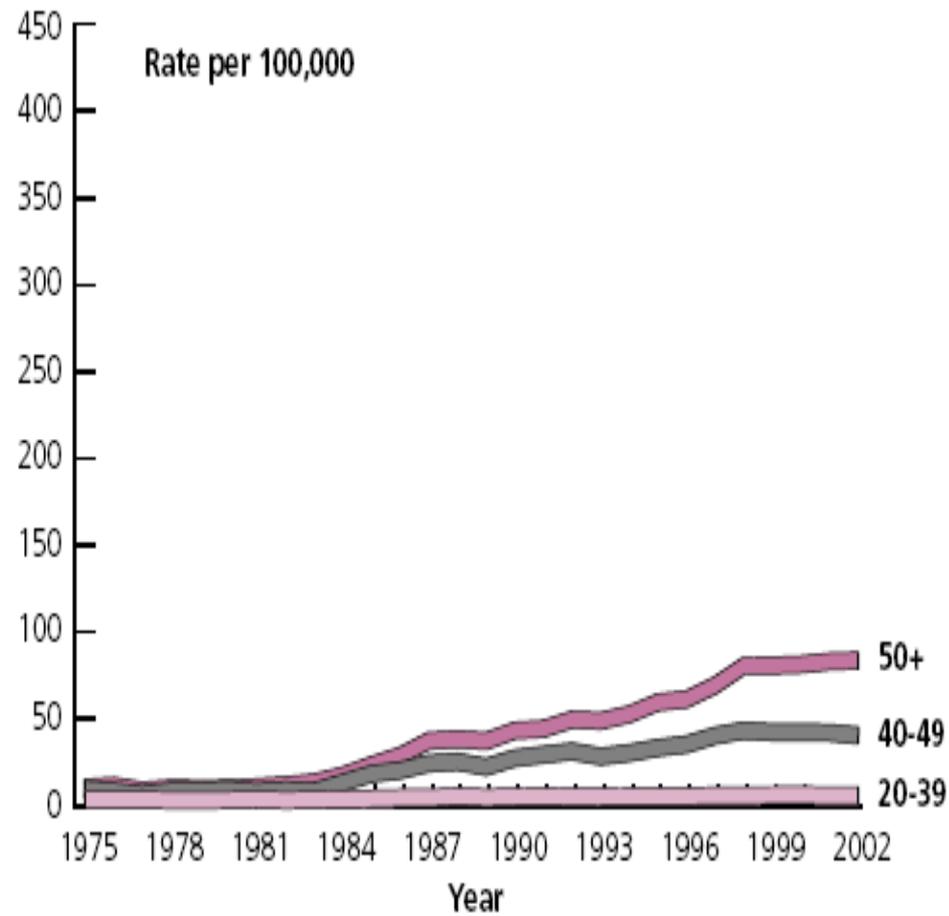
- #1 Incidence of reported cancers in US women
  - > 211,000 invasive in 2005
  - > 58,000 in situ in 2005
- 13% risk of breast cancer in life time
- #2 Cancer killer
- Survival improving
  - 5-year survival
    - 63% in 1960
    - 75% in 1977
    - 82% in 1990

**Figure 5. Female Breast Cancer – Invasive and Ductal Carcinoma In Situ (DCIS) Age-Adjusted Incidence Rates\* by Age, US (SEER), 1975-2002**

**A. Invasive**



**B. Ductal Carcinoma In Situ (DCIS)**



\*Rates are age-adjusted to the 2000 US standard population within each age group.

**Data source:** Surveillance, Epidemiology, and End Results Program, 1973-2002, Division of Cancer Control and Population Science, National Cancer Institute, 2005.

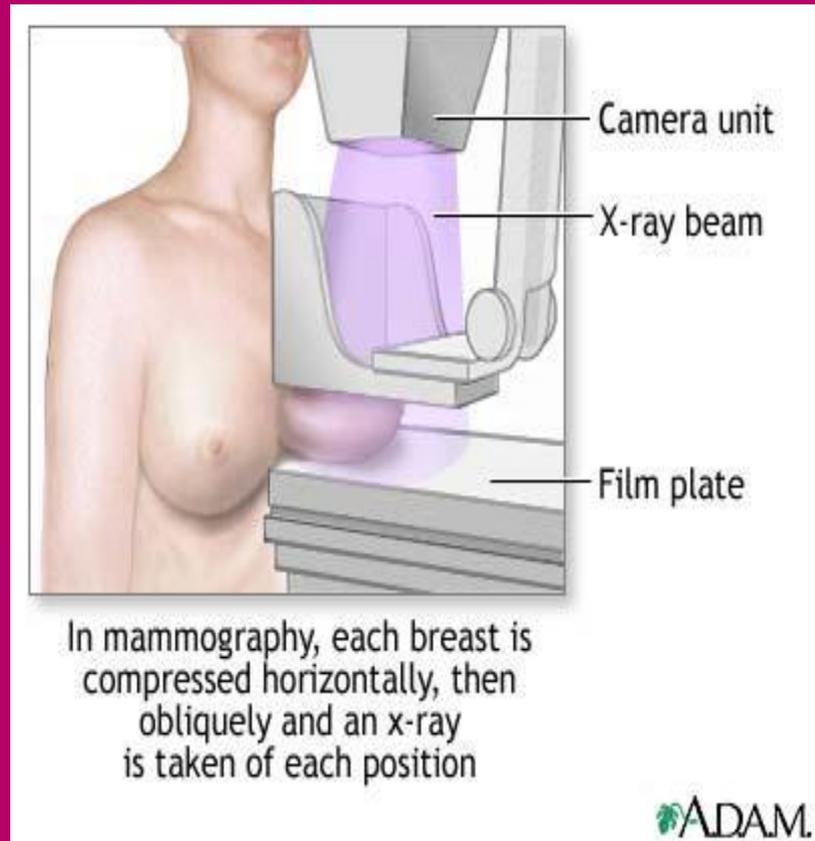
American Cancer Society, Surveillance Research, 2005

# Risk Factors

- Gender
- Age
- Genetic (5-10%)
- Family history
- Personal history of breast cancer
- Race
- History abnormal breast bx
- History breast radiation
- Menstrual history
- Pregnancy history
- HRT
- Alcohol
- Obesity

# Screening

- Age 40 and older
  - Mammogram yearly
  - Clinical breast exam yearly
  - Monthly SBE (opt.)



# Mammogram BI-Rads

## BI-RADS Assessment Categories

Category 0	Need Additional Imaging Evaluation
Category 1	Negative
Category 2	Benign Finding
Category 3	Probably Benign Finding – Short Interval Follow-Up Suggested
Category 4	Suspicious Abnormality – Biopsy Should Be Considered
Category 5	Highly Suggestive of Malignancy – Appropriate Action Should Be Taken



Priority for Subsites:

Path report

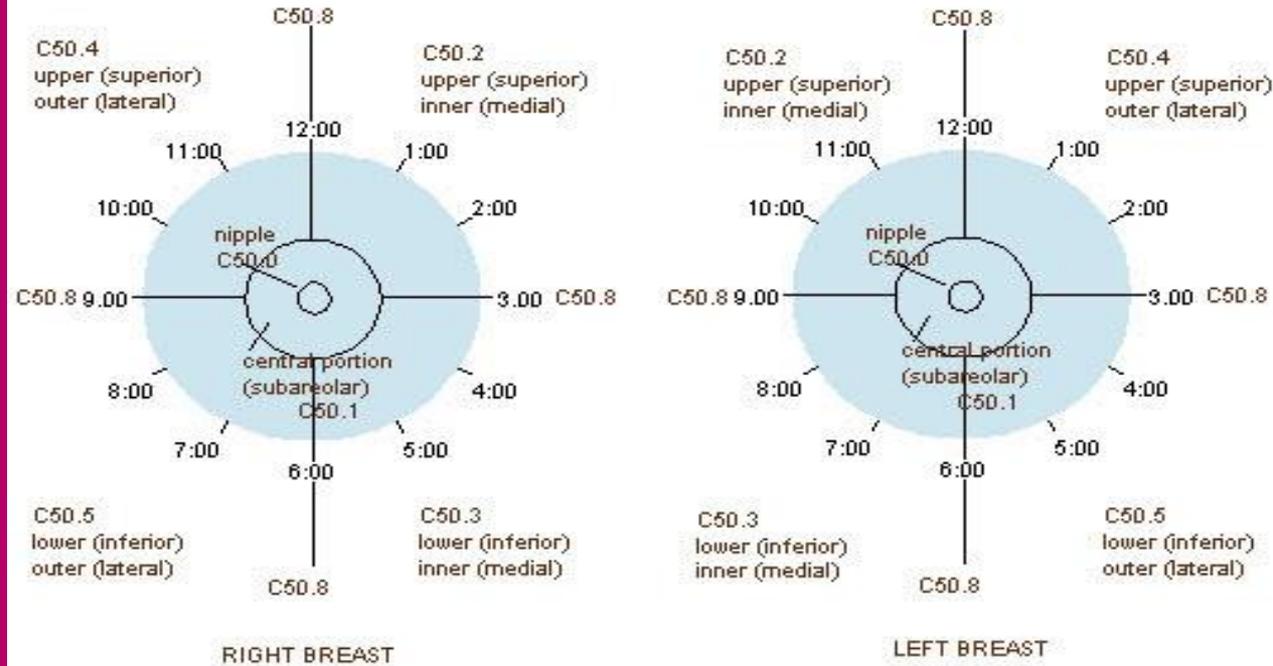
Op report

H&P

Radiology



"Clock" Positions, Quadrants and ICD-O Codes of the Breast



Multiple lesions in the breast = C50.9

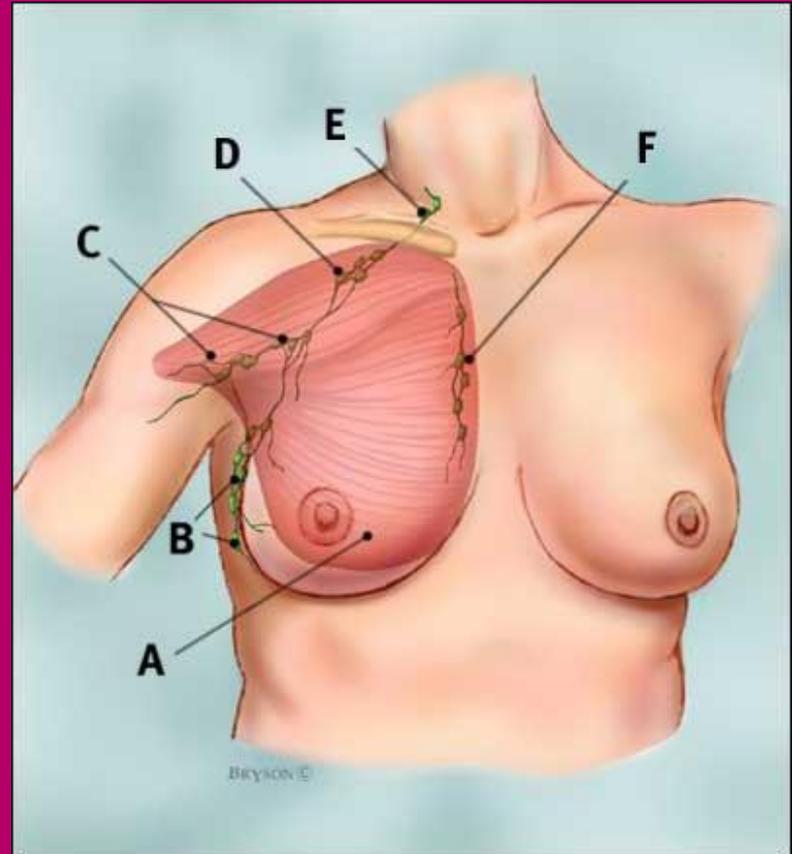
Upper, Lower, Inner, Outer, Border = C50.8

Code LATERALITY – if both breasts, 2 primaries unless mets from one to the other is documented

# Lymph Nodes

**Lymph node areas adjacent to breast area**

- A pectoralis major muscle**
- B axillary lymph nodes: levels I**
- C axillary lymph nodes: levels II**
- D axillary lymph nodes: levels III**
- E supraclavicular lymph nodes**
- F internal mammary lymph nodes**



# Histologies

## Noninvasive

- DCIS (15%)
- LCIS (2%)
- Paget's w/o invasion

## Invasive

- Ductal (includes inflammatory) (60%)
- Lobular (5-10%)
- Medullary (1-5%)
- Mucinous (2-5%)
- Papillary (2-5%)
- Tubular (2-5%)

# Histology Coding Rules (Single Lesion)

1. Code the histology if only one type is mentioned in the pathology report

Example: Comedocarcinoma, uOQ right breast

Answer: 8501/3 Comedocarcinoma

# Histology Coding Rules (Single Lesion)

2. Code the invasive histology when tumor is both invasive and in situ

Example 1: Right breast tumor, tubular carcinoma with lobular carcinoma in situ

Tubular carcinoma 8211/3

Lobular carcinoma in situ 8520/2

Answer: 8211/3 Tubular carcinoma

# Histology Coding Rules (Single Lesion)

**Exception to Rule 2:** If the histology of the invasive component is an 'NOS' term (e.g., carcinoma, adenocarcinoma), then code the histology of the specific term associated with the in situ component and an invasive behavior

**Example 3:** Carcinoma and in situ ductal carcinoma, single lesion right UOQ breast

Carcinoma, NOS 8010/3

In situ ductal carcinoma 8500/2

**Answer:** 8500/3 Infiltrating duct carcinoma

# Histology Coding Rules (Single Lesion)

3. Use a mixed histology code if one exists
4. Use a combination code if one exists

# Combination Examples

Example 1: Invasive ductal carcinoma, mucinous type, and invasive lobular carcinoma; left breast single lesion

Ductal carcinoma 8500/3

Lobular carcinoma 8520/3

Answer: 8522/3

Infiltrating duct and lobular carcinoma

Example 2: Left breast lesion, uOQ, duct carcinoma and tubular carcinoma

Duct carcinoma 8500/3

Tubular carcinoma 8211/3

Answer: 8523/3

Infiltrating duct mixed with other types of carcinoma

# Histology Coding Rules (Single Lesion)

5. Code the more specific term when one of the terms is 'NOS' and the other is a more specific description of the same histology

Example: Breast lesion, adenocarcinoma and mucinous adenocarcinoma

Adenocarcinoma, NOS                      8140/3

Mucinous adenocarcinoma              8480/3

Answer: 8480/3 Mucinous adenocarcinoma

# Histology Coding Rules (Single Lesion)

## 6. Code the majority of the tumor

Predominantly  
with features of  
Major  
Type (eff. 1/1/99)  
With....differentiation (eff.  
1/1/99)  
Pattern and architecture (if  
in CAP protocol; eff.  
1/1/2003)

Example 1: Breast tumor, duct  
adenocarcinoma with apocrine  
features

Duct adenocarcinoma	8500/3
Apocrine adenocarcinoma	8401/3

Answer: 8401/3 Apocrine  
adenocarcinoma

# Histology Coding Rules (Single Lesion)

7. Code the numerically higher ICD-O-3 code

Example: Left breast, apocrine and mucinous adenocarcinoma

Apocrine adenocarcinoma 8401/3

Mucinous adenocarcinoma  
8480/3

Answer: 8480/3 Mucinous adenocarcinoma

# Histology Coding Rules (Multiple Tumors, Single Primary)

Code the histology of the invasive tumor  
when one lesion is in situ and the other is  
invasive

Example: 2 lesions, right breast:

- 1) LOQ, invasive lobular CA 8520/3
- 2) UIQ, noninfiltrating lobular CA 8520/2

Answer: 8520/3 Lobular carcinoma, NOS

# Histology Coding Rules (Multiple Tumors, Single Primary)

Code the histology when multiple tumors have the same histology

Example: Left breast

- 1) U0Q tumor, medullary CA 8510/3
- 2) U1Q tumor, medullary CA 8510/3

Answer: 8510/3 Medullary carcinoma

# Histology Coding Rules (Multiple Tumors, Single Primary)

Use a combination code for

Breast: Paget disease and duct carcinoma  
(8541)

Example 1: Right breast

- |                            |        |
|----------------------------|--------|
| 1) Paget disease of nipple | 8540/3 |
| 2) IIC, ductal carcinoma   | 8500/3 |

Answer: 8541/3 Paget disease and infiltrating  
duct carcinoma of breast

# Histology Coding Rules (Multiple Tumors, Single Primary)

Use a combination code for

Breast: Duct carcinoma and lobular carcinoma  
(8522)

Example 2: left breast

1) U0Q, ductal CA in situ 8500/2

2) L0Q, lobular CA in situ 8520/2

Answer: 8522/2 Intraductal carcinoma and lobular carcinoma in situ

# Histology Coding Rules (Multiple Tumors, Single Primary)

Code the more specific term when one of the terms is 'NOS' and the other is a more specific description of the same histology

Example: Right breast

- |                              |        |
|------------------------------|--------|
| 1) UIQ, carcinoma            | 8010/3 |
| 2) LIQ, cribriform carcinoma | 8201/3 |

Answer: 8201/3 Cribriform carcinoma

# Histology Coding Rules (Multiple Tumors, Multiple Primaries)

Code all other multiple tumors with different histologies as multiple primaries

Example: Left breast

- |                            |        |
|----------------------------|--------|
| 1) UOQ, lobular carcinoma  | 8520/3 |
| 2) LIQ, mucinous carcinoma | 8480/3 |

Answer: 2 primary sites; complete 2 abstracts

# Special Breast Rules (SEER Appendix C)

- If the diagnosis is both lobular and ductal, use code 8522 (in situ or infiltrating or combo)
- If the diagnosis is mixed invasive and in situ, code the invasive
- Use a combination code if ductal OR lobular mixed with another type (8523 OR 8524)
- If the diagnosis includes more than one subtype, use a combination code

# Special Breast Rules (SEER Appendix C)

- Code the infiltrating ductal subtype when:
  - Type: Duct carcinoma, \_\_\_\_\_ type
  - Predominantly: Duct ca, predominantly \_\_\_\_\_
  - With features: Duct ca with features of \_\_\_\_\_
  - Subtype: Infiltrating ductal, \_\_\_\_\_ subtype
  - Variant: Duct Ca, \_\_\_\_\_ variant

# Coding Behavior for Breast

## *Synonyms for in situ, behavior code 2*

- Confined to epithelium
- Intracystic
- Intraductal
- Intraepidermal
- Intraepithelial
- No stromal invasion
- Noninfiltrating
- Noninvasive
- Stage 0

# Priority for Tumor Grade

- Bloom-Richardson (Nottingham) scores 3-9
- Bloom-Richardson grade (low, intermed, high)
- Nuclear grade
- Terminology
- Differentiation
- Histologic grade
- Grade I, II, III, IV

FORDS pg 13-14

# Breast Grading Conversion Table

BR Scores	BR Grade	Nuclear Grade	Terminology	Histologic Grade	Code
<b>3-5</b>	<b>Low</b>	<b>1/3; 1/2</b>	<b>Well diff</b>	<b>I/III; 1/3</b>	<b>1</b>
<b>6, 7</b>	<b>Inter-mediate</b>	<b>2/3</b>	<b>Mod diff</b>	<b>II/III; 2/3</b>	<b>2</b>
<b>8, 9</b>	<b>High</b>	<b>2/2; 3/3</b>	<b>Poorly diff</b>	<b>III/III; 3/3</b>	<b>3</b>

# Work-Up

## Physical Exam

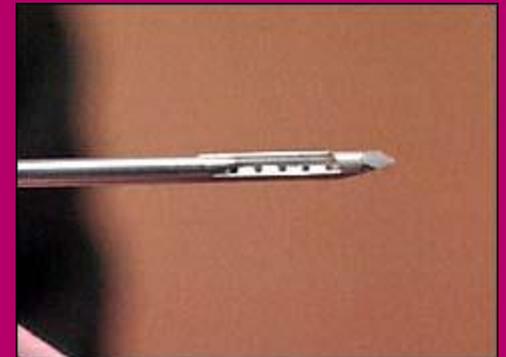
- Breast exam
  - Quadrant
  - Inflammatory?
- LN evaluation
  - Adenopathy

## Imaging

- Mammogram
- Sonogram
- MRI
- Chest x-ray
- Bone scan
- Etc.

## Biopsy

- FNA
- Core needle
- Excisional bx



# Collaborative Staging: Breast

Presentation developed by  
Collaborative Staging  
Steering Committee  
[ajcc@facs.org](mailto:ajcc@facs.org)

**2005 Update**

# CS Breast Cancer

- Collaborative Staging (CS) data items submitted to NPCR
  - CS Extension
  - CS Lymph Nodes
  - CS Mets at Dx

# CS Breast Cancer

- August 2004 changes
  - CS Extension
    - Inflammatory Breast Cancer
    - One code made "Obsolete"
- March 2005 changes
  - CS Lymph Nodes
    - Change in code description-clarification

# CS Extension Breast: Notes

1. Changes such as dimpling of the skin, tethering, and nipple retraction do not alter the classification
2. Consider adherence, attachment, fixation, induration, and thickening as clinical evidence of extension to skin or subcutaneous tissue; code to 20
3. Consider "fixation, NOS" as involvement of pectoralis muscle; code to 30

# CS Extension Breast: Notes

4. If extension code is \_\_\_\_\_, then behavior code must be \_\_\_\_\_.

BEHAVIOR

EXTENSION

00

2

05, 07

2 or 3

10 or higher

3

# CS Extension Breast: Notes

## 5. Inflammatory carcinoma

- Clinical AND pathologic entity
- Characterized by presence of diffuse erythema and edema (peau d'orange) of breast
- Often occurs without an underlying palpable mass
- Clinical findings should involve the majority of the skin of the breast

# CS Extension Breast: Notes

## 5. Inflammatory carcinoma (cont.)

- Skin changes arise quickly in the affected breast
- Neglected locally advanced breast cancer is not inflammatory carcinoma
- Mass and thickening of the skin over the breast may be detectable on imaging
  - Due to tumor emboli within dermal lymphatics that may or may not be apparent on skin biopsy

# CS Extension Breast: Notes

## 5. Inflammatory carcinoma (continued)

- Pathologic involvement of the dermal lymphatics alone does not indicate inflammatory carcinoma
- Biopsy is needed to demonstrate dermal lymphatic or breast parenchyma involvement

# CS Extension Breast: Notes

## 6. Recording inflammatory carcinoma

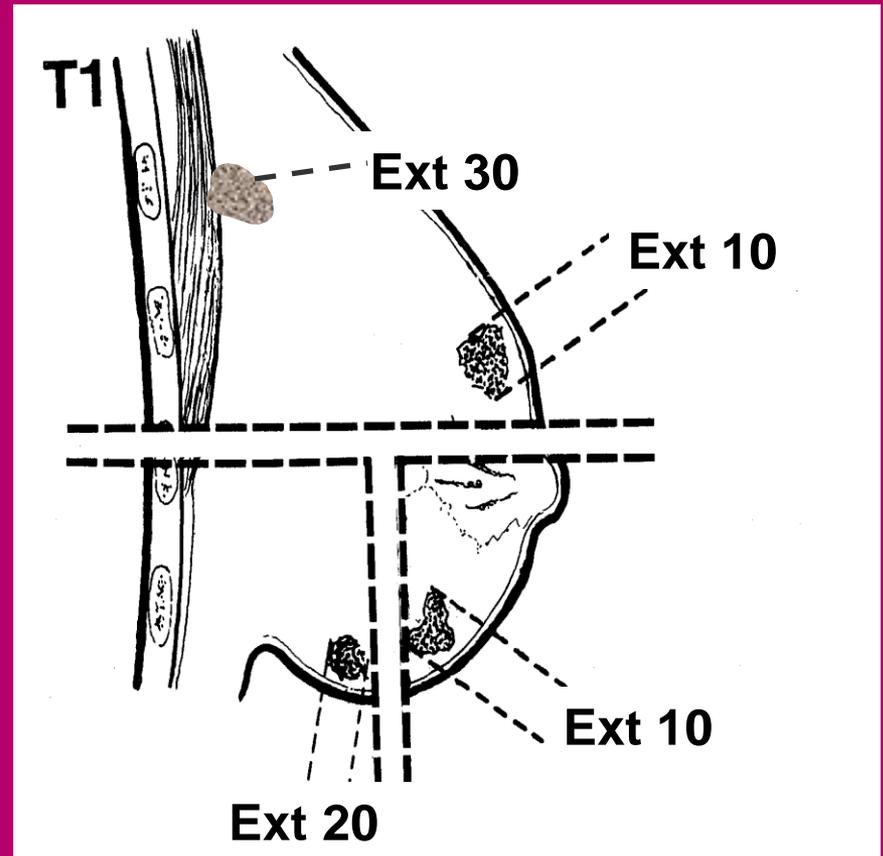
- Revised August 2004
- Record in a text field
  - Stated diagnosis of inflammatory carcinoma
  - Extent and character of skin involvement

# CS Extension Breast

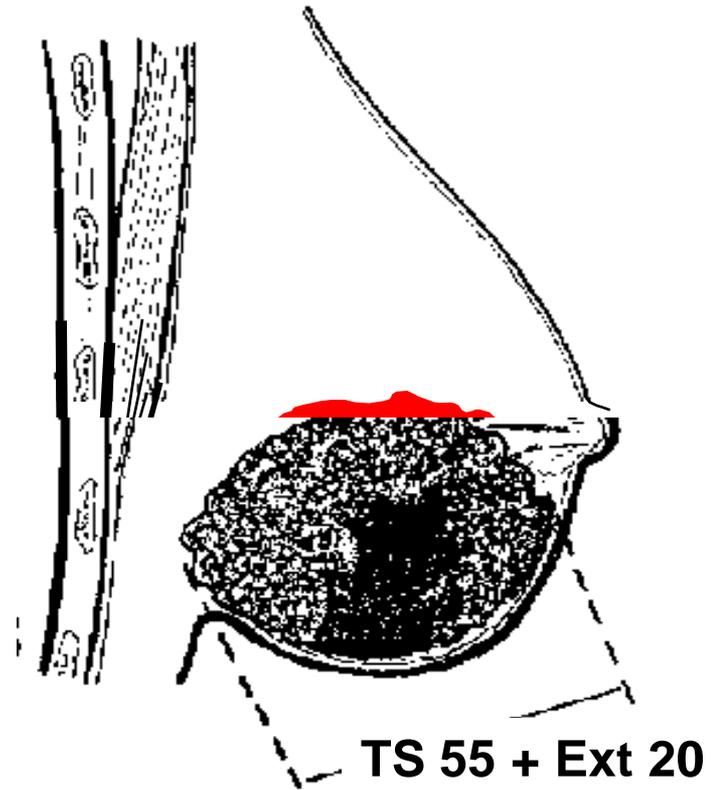
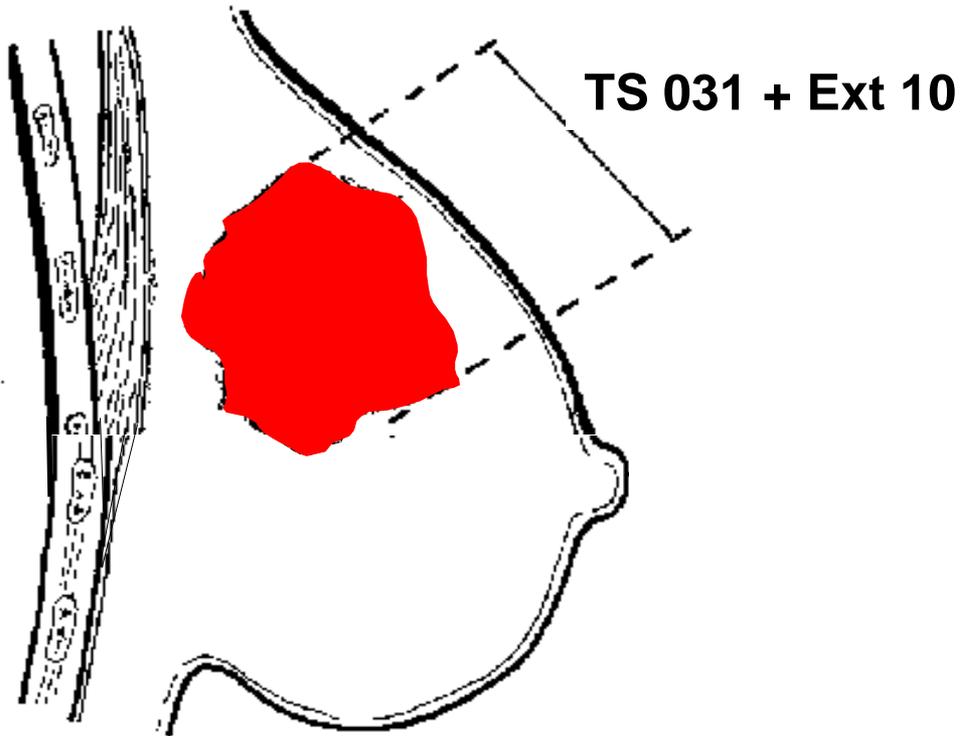
- **Code 00**
  - In situ
- **Code 05**
  - Paget disease of nipple (WITHOUT underlying tumor)
- **Code 07**
  - Paget disease of nipple (WITHOUT underlying invasive carcinoma pathologically)
- **Code 20**
  - Invasion of subcutaneous tissue
  - Local infiltration of dermal lymphatics adjacent to primary tumor involving skin by direct extension
  - Skin infiltration of primary breast including skin of nipple and/or areola

# CS Extension Breast

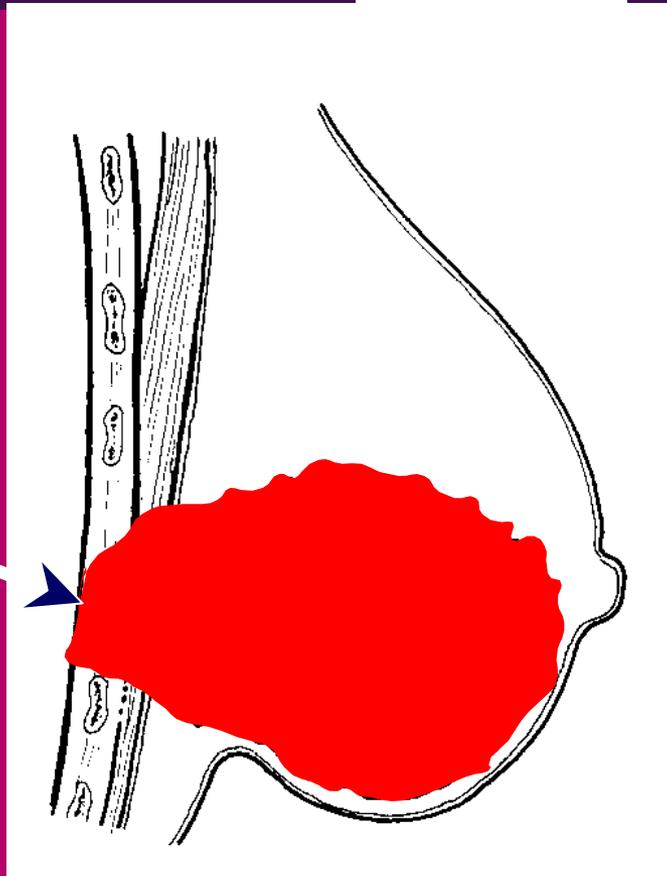
- Code 30
  - Attached or fixation to pectoral muscle or underlying tissue; deep fixation; invasion of (or fixation to) pectoral fascia or muscle
- Code 40
  - Invasion of (or fixation to): chest wall; intercostal or serratus anterior muscle; rib



# CS Extension Breast



# CS Extension Breast



Ext. 40

**Chest wall includes**  
**Ribs**  
**Intercostal muscles**  
**Serratus anterior muscle**

**Does NOT include**  
**Pectoral muscle (Ext 30)**

Adapted from: TNM Atlas, 3rd ed. 2nd rev., by B. Spiessl et al. Springer Verlag 1992.

# CS Extension Breast

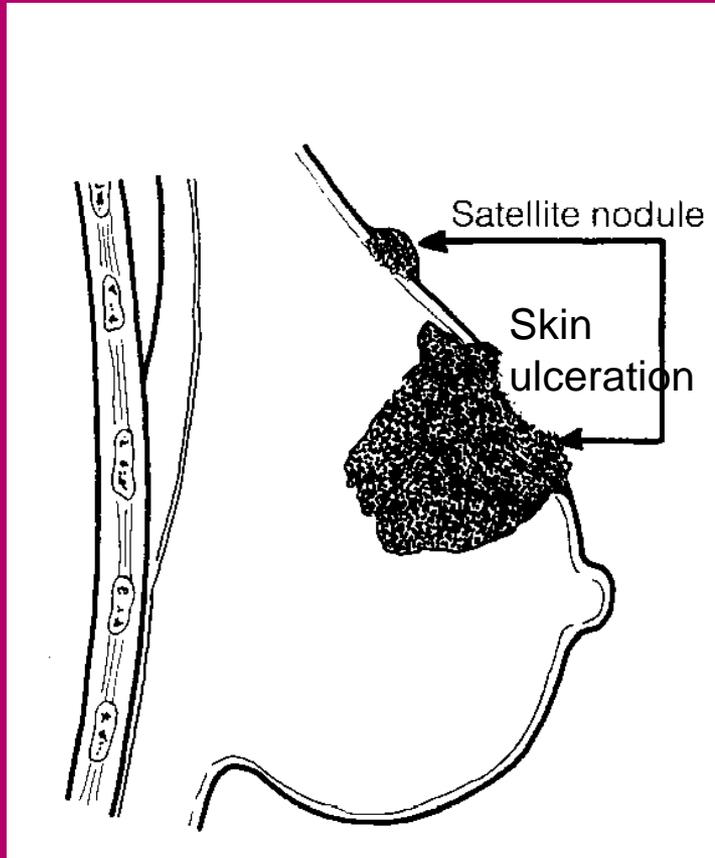
- Code 51

- Extensive skin involvement including: satellite nodules in skin of primary breast; ulceration of skin of breast
- Any of the following involving no more than 50% of breast or percent involved NOS: edema of skin; en cuirasse, erythema, inflammation of skin; peau d'orange

- Code 52

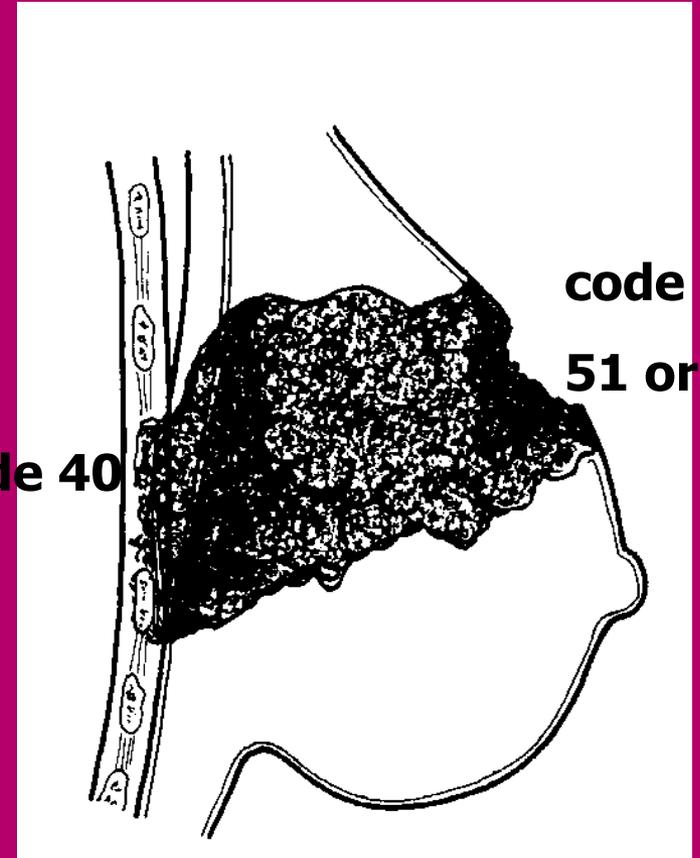
- Any of the following involving more than 50% of the breast: edema of skin; en cuirasse, erythema, inflammation of skin; peau d'orange

# CS Extension Breast



**Ext. 51**

**61 Chest wall plus skin involvement  
≤ 50% of breast or NOS (codes 40 + 51)**



**code 40**

**code  
51 or 52**

**62 Chest wall plus skin involvement  
> 50% of breast (codes 40 + 52)**

# CS Extension Breast

- Code 71

- Diagnosis of inflammatory carcinoma

- WITH a clinical description of inflammation, erythema, edema, peau d'orange, involving less than 50% of skin of breast, or percent of involvement not stated
- WITH or WITHOUT dermal lymphatic infiltration

- Inflammatory carcinoma, NOS

- Code 72

- OBSOLETE August 2004

- Code 73

- Diagnosis of inflammatory carcinoma

- WITH a clinical description of inflammation, erythema, edema, peau d'orange, of more than 50% of breast
- WITH or WITHOUT dermal lymphatic infiltration

# CS Extension Breast

- Enhanced MRIs of inflammatory breast cancer showing dermal lymphatic invasion

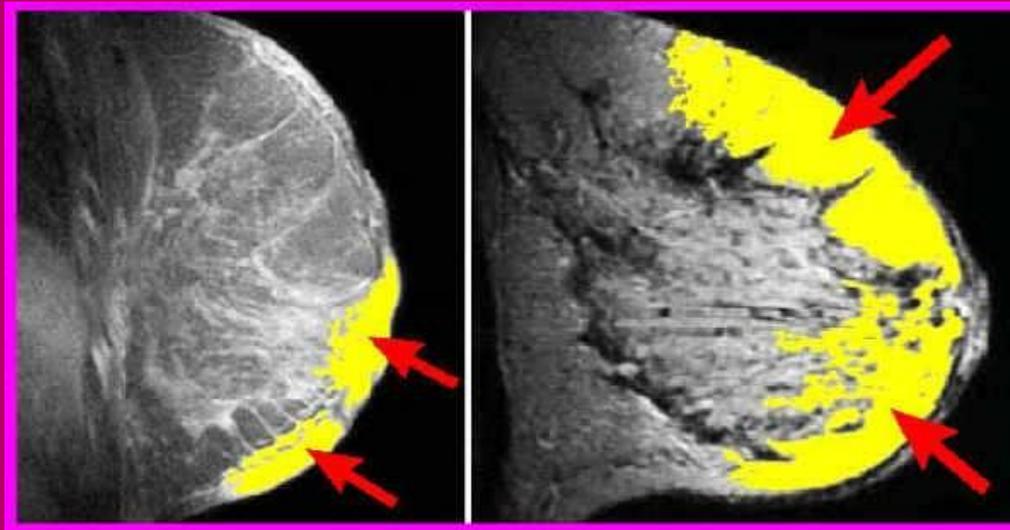


Image source:  
[www.vci.org/  
inflcase2.htm](http://www.vci.org/inflcase2.htm)

Code 71  $\leq$ 50% involvement

Code 73 >50% involvement

# CS Lymph Nodes Breast: Notes

1. Code only regional nodes and nodes, NOS;

2. If nodes are positive but size of the mets not stated, assume the mets is  $> 0.2$  mm and code the lymph nodes as positive in this field

3. If no lymph nodes were surgically removed, use only these codes for clinical evaluation of axillary nodes:

00 - Clinically negative

50 - Fixed/matted nodes

60 - Clinically positive axillary nodes

99 - Unknown/not stated

# CS Lymph Nodes Breast: Notes

4. If pre-surgical therapy is given and there is clinical evaluation of nodes, use only the following for clinical evaluation of axillary nodes AND code a '5' in "CS Reg Nodes Eval" field:

00 - Clinically negative

50 - Fixed/matted nodes

60 - Clinically positive axillary nodes

If there is no clinical evaluation of nodes, use information from path evaluation and code a '6' in "CS Reg Nodes Eval" field

5 = "Y" code

# CS Lymph Nodes Breast:

## Notes

### 5. Isolated tumor cells (ITC)

03/05 Clarification

Single tumor cells or small clusters  $\leq 0.2$  mm

usually detected only by IHC (immunohistochemical) or molecular studies but may be verified on H & E stains

Do not usually show evidence of malignant activity

Lymph nodes with ITCs only are **NOT** considered positive lymph nodes

# CS Lymph Nodes Breast

- **Code 00**
  - No regional lymph node involvement OR ITCs
- **Code 05**
  - No regional lymph nodes but ITCs detected on routine H & E stains
- **N = 0**
- **Code 13**
  - Axillary lymph nodes, ipsilateral, micrometastasis ONLY detected by IHC ONLY
- **Code 15**
  - Axillary lymph nodes, ipsilateral, micrometastasis ONLY detected or verified on H & E; Micrometastasis, NOS
- **N = 1mi**

# CS Lymph Nodes Breast (+)

- **Code 25**
  - Movable axillary lymph nodes, ipsilateral, positive with more than micrometastasis
- **Code 26**
  - Stated as N1, NOS
- **Code 28**
  - Stated as N2, NOS
- **Code 50**
  - Fixed/matted ipsilateral axillary nodes, positive with more than micrometastasis
  - Fixed/matted ipsilateral axillary nodes, NOS
- **Code 60**
  - Axillary/regional lymph nodes, NOS
  - Lymph nodes NOS

# CS Lymph Nodes Breast (+)

- Code 71

- IM nodes, ipsilateral, positive on sentinel nodes but not clinically apparent WITHOUT axillary lymph nodes, ipsilateral

- Code 72

- IM nodes, ipsilateral, positive on sentinel nodes but not clinically apparent WITH axillary lymph nodes, ipsilateral

- Code 73

- IM nodes, ipsilateral, positive on sentinel nodes but not clinically apparent UNKNOWN if positive axillary lymph nodes, ipsilateral

- Code 74

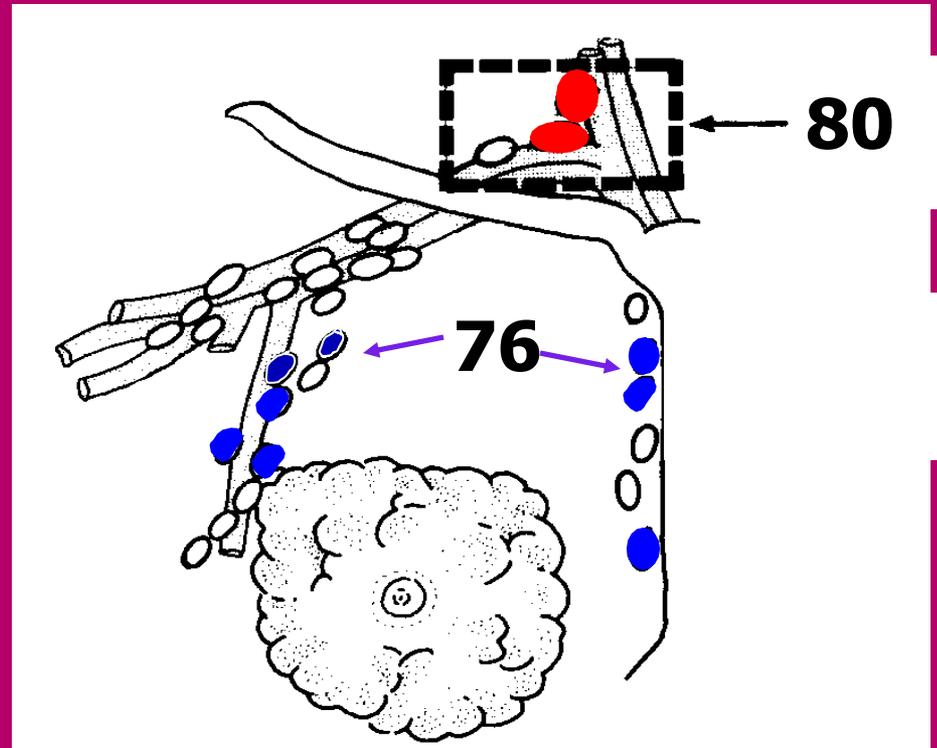
- IM nodes, ipsilateral, clinically apparent WITHOUT axillary lymph nodes, ipsilateral

# CS Lymph Nodes Breast (+)

- Code 75
  - Infraclavicular lymph nodes (subclavicular)
- Code 76
  - IM nodes, ipsilateral, clinically apparent WITH axillary lymph nodes, ipsilateral, WITH or WITHOUT infraclavicular lymph nodes
- Code 77
  - IM nodes, ipsilateral, clinically apparent UNKNOWN if positive axillary lymph nodes, ipsilateral
- Code 78
  - (75) + (77)

# CS Lymph Nodes Breast (+)

- code 79
  - Stated as N3, NOS
- code 80
  - Supraclavicular nodes
- code 99
  - unknown



# CS Lymph Nodes Breast

- Clinically apparent internal mammary nodes (codes 74, 76, 77, 78) identified by
  - Imaging but not lymphoscintigraphy
  - Physical exam (palpable)
  - Visible nodes on gross pathology
- Lymphoscintigraphy
  - Mapping of sentinel lymph nodes using radioisotopes to identify nodes for removal by sentinel node biopsy

# Breast: CS Mets at DX

- Code 00
  - No; none
- Code 10
  - Distant lymph nodes
    - Cervical, NOS; contralateral/bilateral axillary and/or internal mammary; distant lymph nodes, NOS
- Code 40
  - Distant metastases except distant lymph nodes
    - Distant metastasis, NOS; carcinomatosis
- Code 42
  - Further contiguous extension
    - Skin over:
      - axilla; contralateral breast; sternum; upper abdomen

# Breast: CS Mets at DX

- Code 44
  - Metastasis
    - Adrenal (suprarenal) gland; bone, other than adjacent rib; contralateral breast if stated as metastatic; lung; ovary; satellite nodule(s) in skin other than primary breast
- Code 50
  - (10) + any of [(40) to (44)]
- Code 99
  - unknown

# CS Evaluation Fields

0	PE, imaging, clinical; no path, no autopsy	c
1	Scope, biopsy, no surg resection, no aut	c
2	Autopsy (dx before death)	p
3	Surg resect w/o neoadjuv tx	p
5	Surg resect WITH neoadjuv, clinical	c
6	Surg resect WITH neoadjuv, path	y
8	Autopsy (dx unknown pre death)	a
9	unk if surg resect, not documented	c

# CS Evaluation Fields

- SEE STANDARD TABLE
  - TS/Extension Evaluation
    - "5" Surgical resection WITH neoadjuvant tx - extension based on clinical evidence = clinical staging
    - "6" Surgical resection WITH neoadjuvant tx - extension based on path specimen = "y" code = path staging
  - Reg Nodes Evaluation
  - Reg LN Positive
  - Reg LN Examined
  - CS Mets Evaluation

# SSF 1, 2, 3

- SSF 1 - ERA
- SSF 2 - PRA
  - 010 +/elevated
  - 020 -/WNL
  - 030 borderline
  - "You need to refer to the lab that ran the test and find out what they are using for normal value ranges."  
per IGR
  - 080 Ordered, no results
- SSF 3 - No. + Ipsilateral Axillary LNs
  - 000 all negative
  - 001 - 089 exact number
  - 090 + LNs ( $\geq 90$ )
  - 095 aspiration + LN
  - 097 + LNs, #?
  - 098 No ax LNs exam

# SSF 4 & 5 - Regional LNs

- SSF 4 IHC RLNs

- 000 RLN neg H&E, no IHC studies, nodes clinically neg
- 001 RLN neg H&E, IHC neg
- 002 RLN neg H&E, IHC + ( $\leq 0.2\text{mm}$ )
- 009 RLN neg H&E, IHC + (size unk)

- SSF 5 mol studies RLNs

- 000 RLN neg H&E, no mol studies, nodes clinically neg
- 001 RLN neg, mol neg
- 002 RLN neg, mol +

888 N/A - CS LN not coded "00"

# SSF 6

- SSF 6 Invasive component – is the tumor invasive, in situ, or a mix?
- 000 all invasive
- 010 all in situ
- 020 mixed w/invasive size noted
- 030 mixed, in situ < 25%
- 040 mixed, in situ  $\geq$  25%
- 050 mixed, % unknown
- 060 mixed, tumor size 999
- 888 unk; clinical tumor size

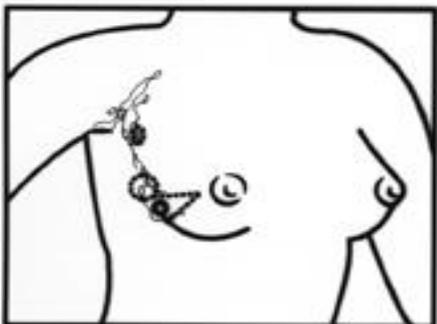
LUMPECTOMY



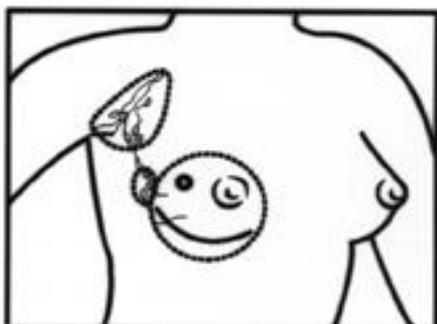
MODIFIED RADICAL MASTECTOMY



PARTIAL MASTECTOMY



RADICAL MASTECTOMY



TOTAL MASTECTOMY



# Surgery

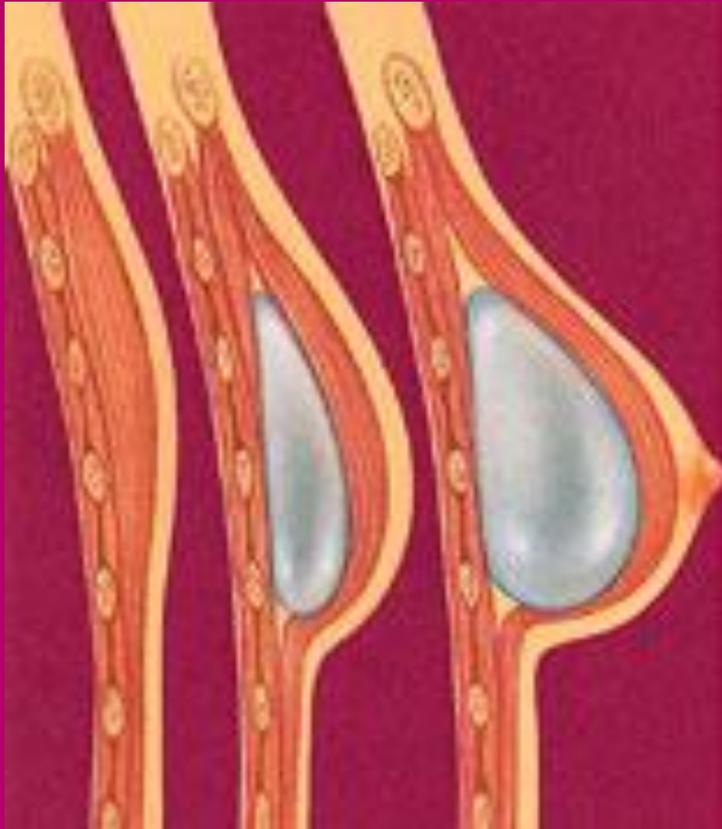
FORDS, pages  
269 and 270

SEER PCSM  
2004,  
Appendix C,  
pages C-485  
and C-486

# Lumpectomy with no residual after core needle biopsy

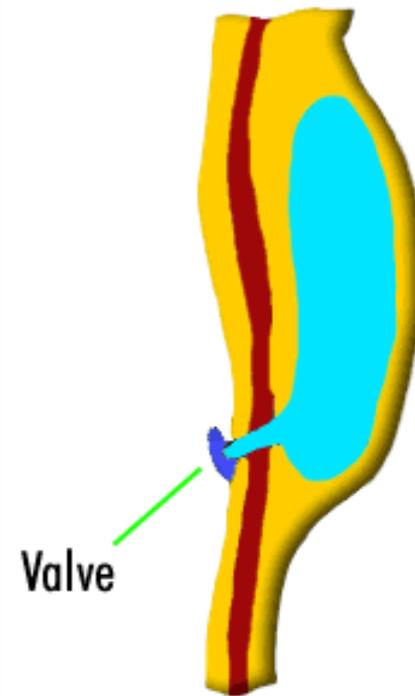
- Code core needle biopsy as 22, excisional biopsy
- Code lumpectomy as 22, lumpectomy
- It was not known at the time of the lumpectomy that the core biopsy removed all the tumor.
- If it were known that the core biopsy removed everything, then the further surgery would be a re-excision.

# Breast Reconstruction - Implant



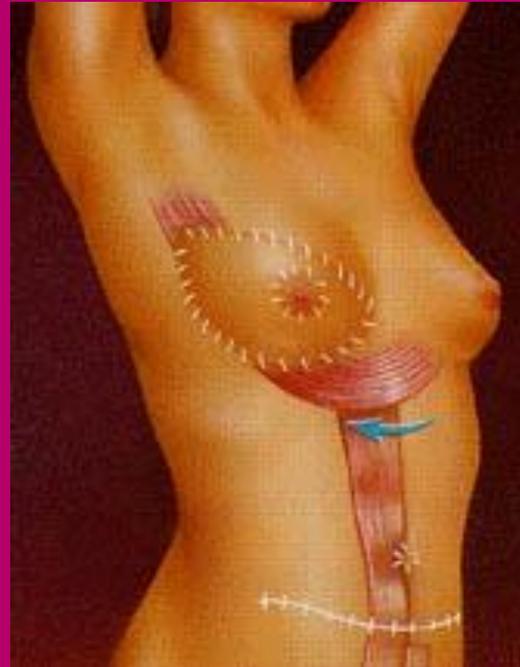
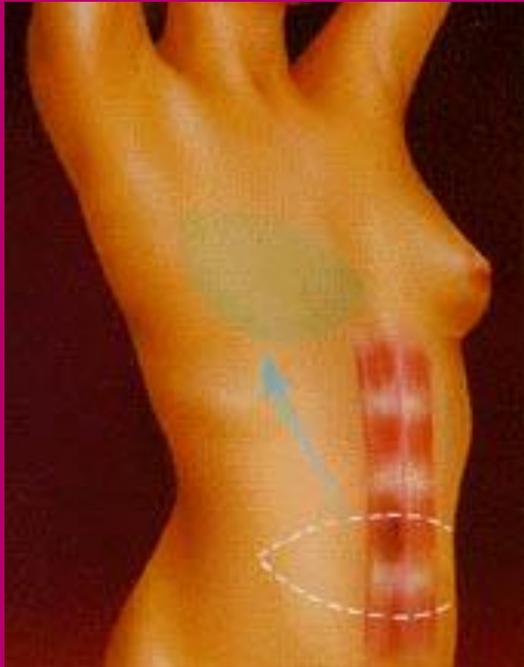
[www.plasticsurgery.org/public\\_education/procedures/BreastReconstruction.cfm](http://www.plasticsurgery.org/public_education/procedures/BreastReconstruction.cfm)

Immediately after Surgery



[www.sghhealth4u.com.sg/.../breast/breast4.htm](http://www.sghhealth4u.com.sg/.../breast/breast4.htm)

# Breast Reconstruction - Tissue



## Tissue

- Natural tissue
- Single-step procedure

Transverse Rectus Abdominis Myocutaneous  
(TRAM) Flap Reconstruction

# Breast Reconstruction - Tissue

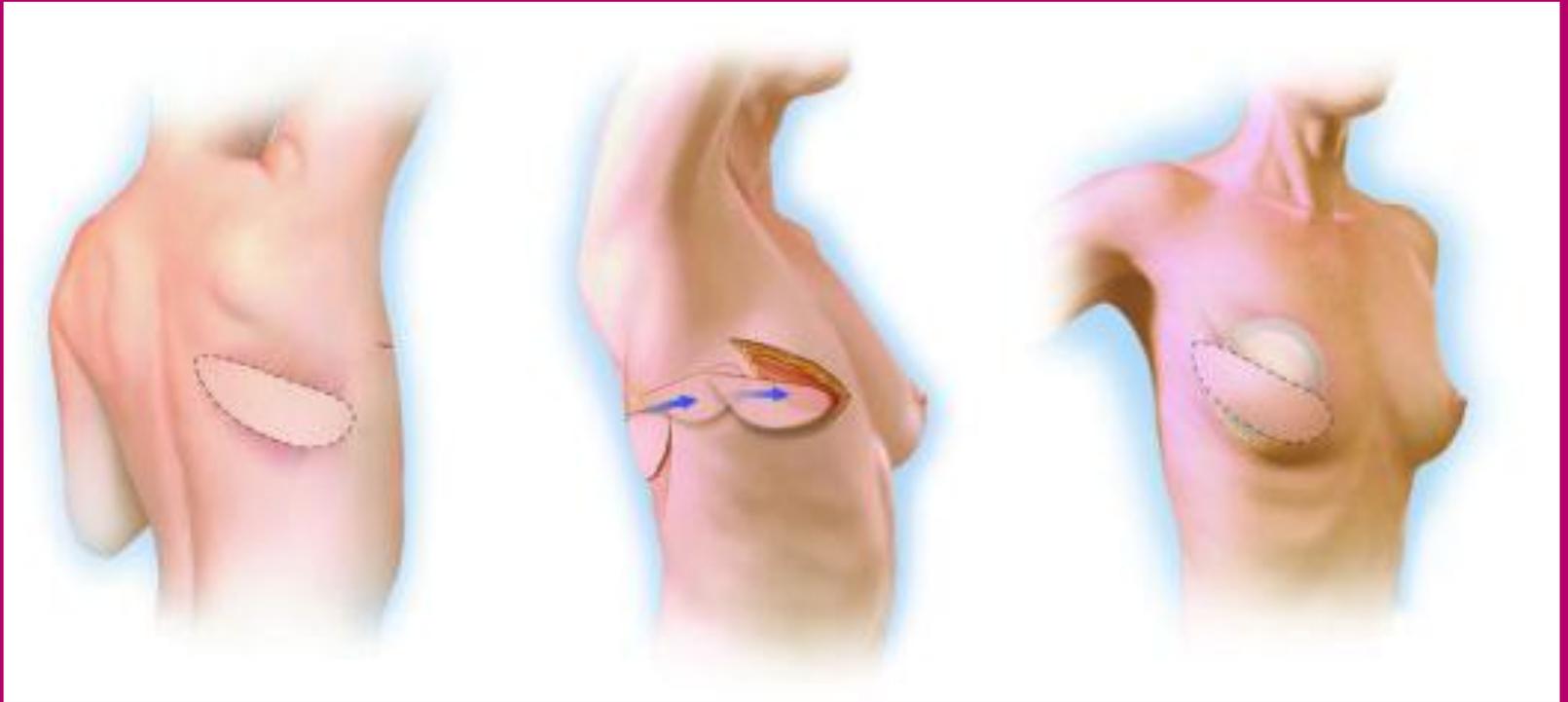


## Tissue

- Natural tissue
- Single-step procedure

Latissimus Dorsi Flap Reconstruction

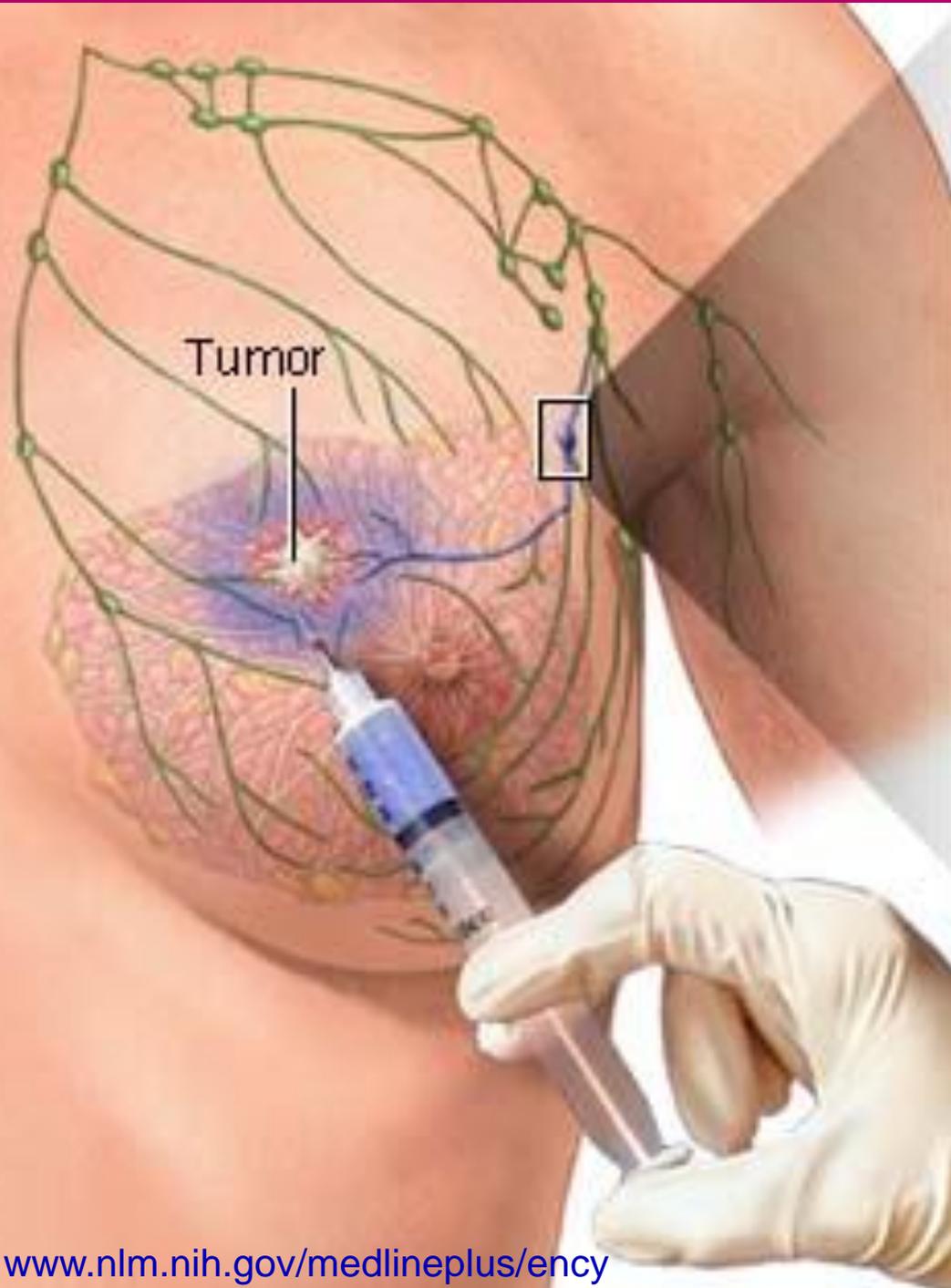
# Breast Reconstruction - Combined



Latissimus Dorsi Flap over Implant

# Breast Reconstruction Codes

- Implant -- Codes 45, 49, 55, 59, 66, 73
- Tissue -- Codes 44, 48, 54, 58, 65, 69
- Combined -- Codes 46, 75, 56, 63, 67, 74
- Choice of codes depends on type of mastectomy
  - Simple/unilateral -- 44, 45, 46
  - Simple/bilateral -- 48, 49, 75
  - Modified/unilateral -- 54, 55, 56
  - Modified/bilateral -- 58, 59, 63
  - Radical/unilateral -- 65, 66, 67
  - Radical/bilateral -- 69, 73, 74



Valves allow fluid to flow in one direction only

# Scope of Regional Lymph Node Surgery Codes

Code	Label
0	None
1	Biopsy or aspiration of regional LNs, NOS
2	Sentinel LN biopsy
3	Number of regional LNs removed unknown
4	1-3 regional LNs removed
5	4 or more regional LNs removed
6	Sentinel biopsy and code 3, 4, or 5 at same time or timing not stated
7	Sentinel biopsy and code 3, 4, or 5 at different times
9	Unknown

# Surgical Procedure/Other Site:

## Breast

- Record removal of distant lymph nodes or other tissues beyond the primary site
  - Resection of cervical lymph nodes
  - Removal of contralateral breast with metastatic disease
- Do not record surgical removal of ovaries in surgical procedure/other site

# Surgical Procedure/Other Site Codes

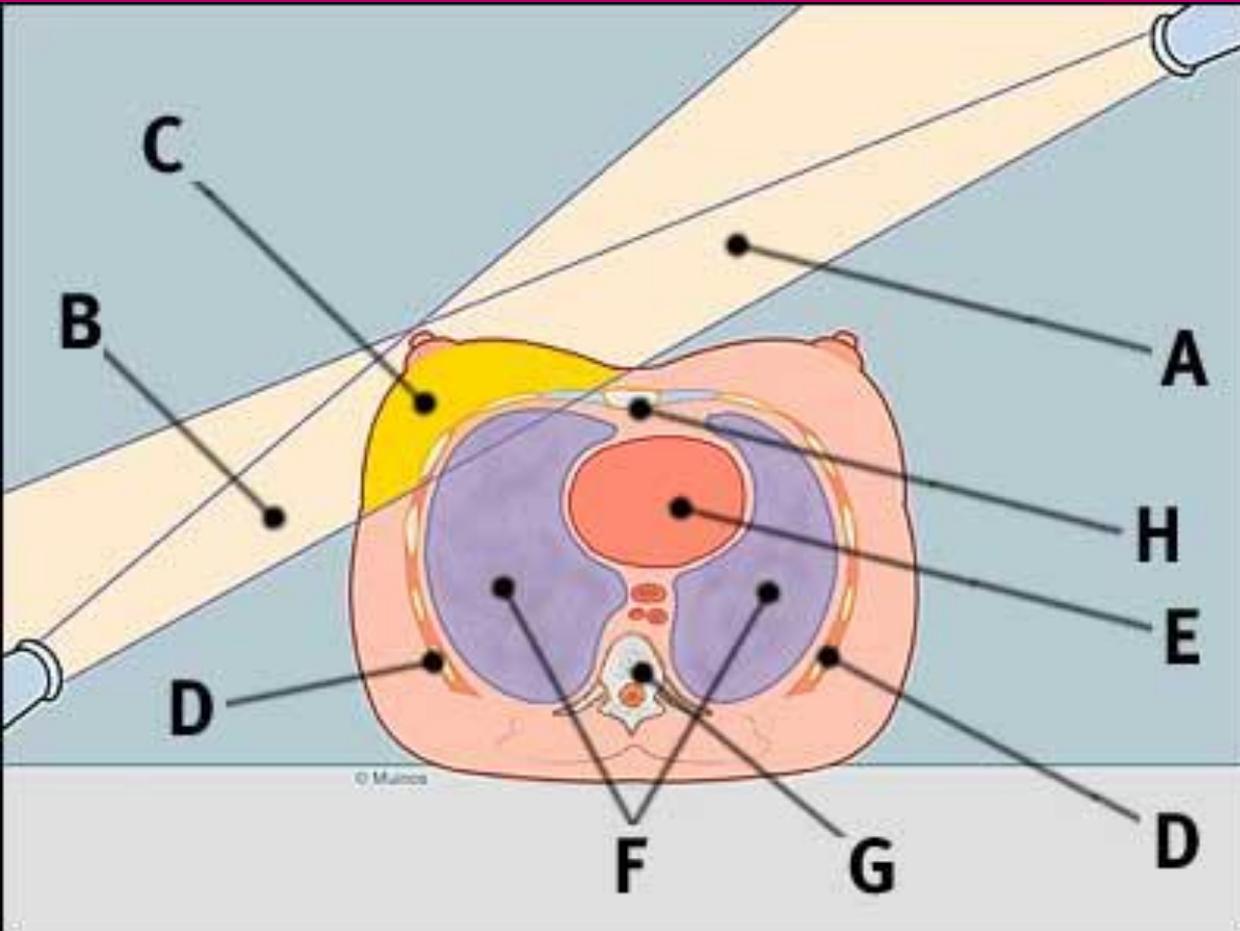
Code	Label
0	None
1	Nonprimary surgical procedure performed
2	Nonprimary surgical procedure to other regional sites
3	Nonprimary surgical procedure to distant lymph nodes
4	Nonprimary surgical procedure to distant site
5	Combination of codes
9	Unknown

# Regional Treatment

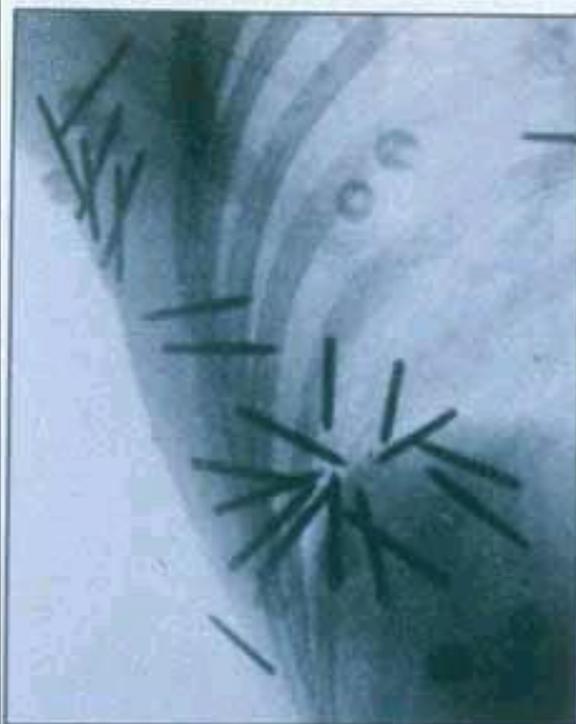
## Modality: Breast

- Adjuvant radiation therapy, usually external beam, may be given as part of first course treatment
    - Prior to surgery to shrink tumor
    - After breast conserving surgery
  - Do not code radiation for ovary ablation in this data item
  - Codes defined in FORDS, pages 155-156
- **VOLUME**
    - Lumpectomy
      - 18 Breast
      - 19 Breast/LN
    - MRM
      - 20 Chest
      - 21 Ch wall/LN

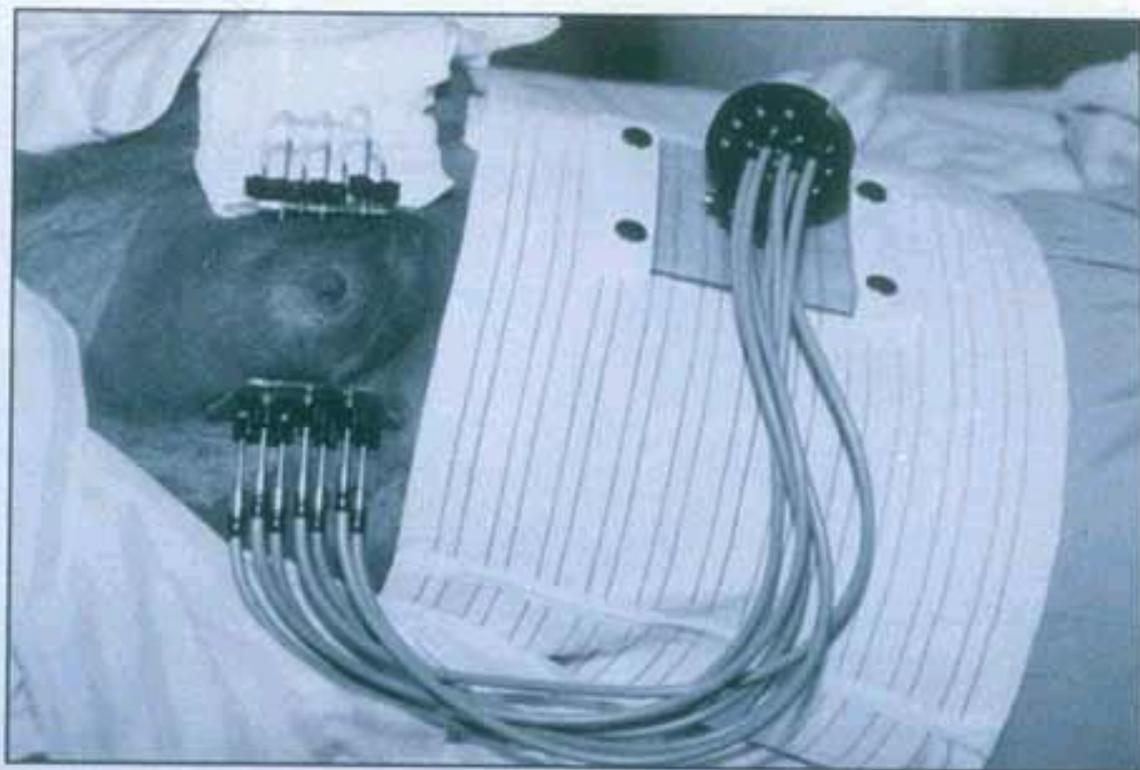
# Cross-sectional view of beam RT



- A** Middle radiation beam
- B** Side radiation beam
- C** Bright yellow: place where radiation is given to the breast
- D** Rib cage/chest wall
- E** Heart
- F** Lungs
- G** Backbone
- H** Sternum/breast bone



[20.33] Interstitial implant for breast cancer<sup>21</sup> in 1929. The radiograph shows the distribution of radium needles. The small circular shadows are beads attached to the distal end of the threads for identification purposes. In this Westminster Hospital technique, 40-50 needles containing a total of 75-100 mgm radium are inserted. The average total dose prescribed was 16,000-21,000 milligram-hours.



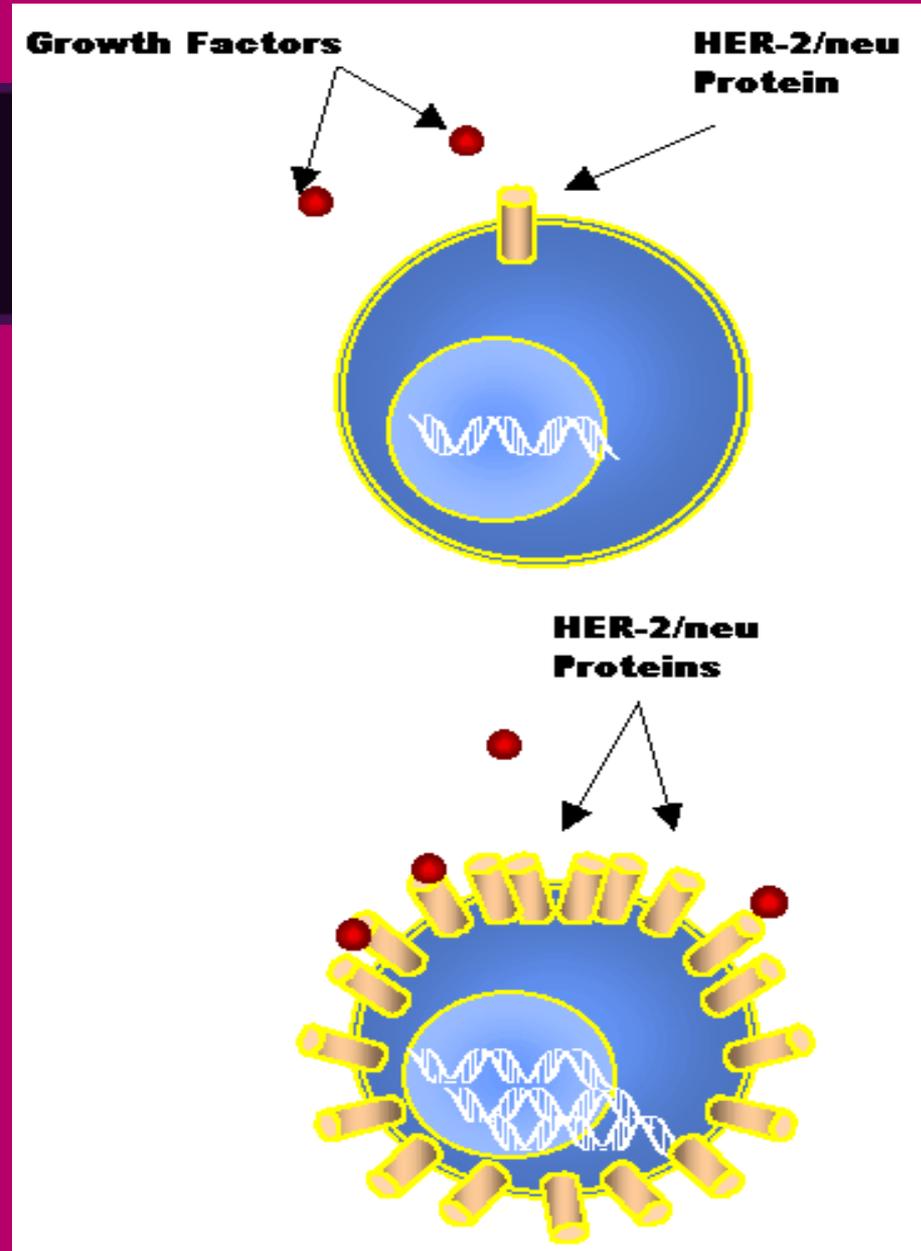
[20.34] Remote afterloading interstitial brachytherapy in the 1990s. This Academic Hospital Utrecht technique<sup>35</sup> is used for breast conservation therapy and ensures that it is not necessary for the patient to have mutilating breast surgery, such as often occurred in the first half of this century. The remote afterloading machine is the microSelectron-LDR which uses caesium-137 ribbon source assemblies. A template is used (left) to assist in positioning the needles accurately, the source transfer tubes (centre) and the afterloading coupling (right) are also shown.

# Chemotherapy

- Single agent chemotherapy
  - Anthracycline, adriamycin, methotrexate, herceptin
- Multiple agent chemotherapy
  - CMF regimen: cyclophosphamide, methotrexate, 5-FU
  - CAF regimen: cyclophosphamide, adriamycin, 5-FU
  - AC/Taxane (Taxol, Taxotere)
- Codes defined in FORDS, pages 171-172
- SEER RX

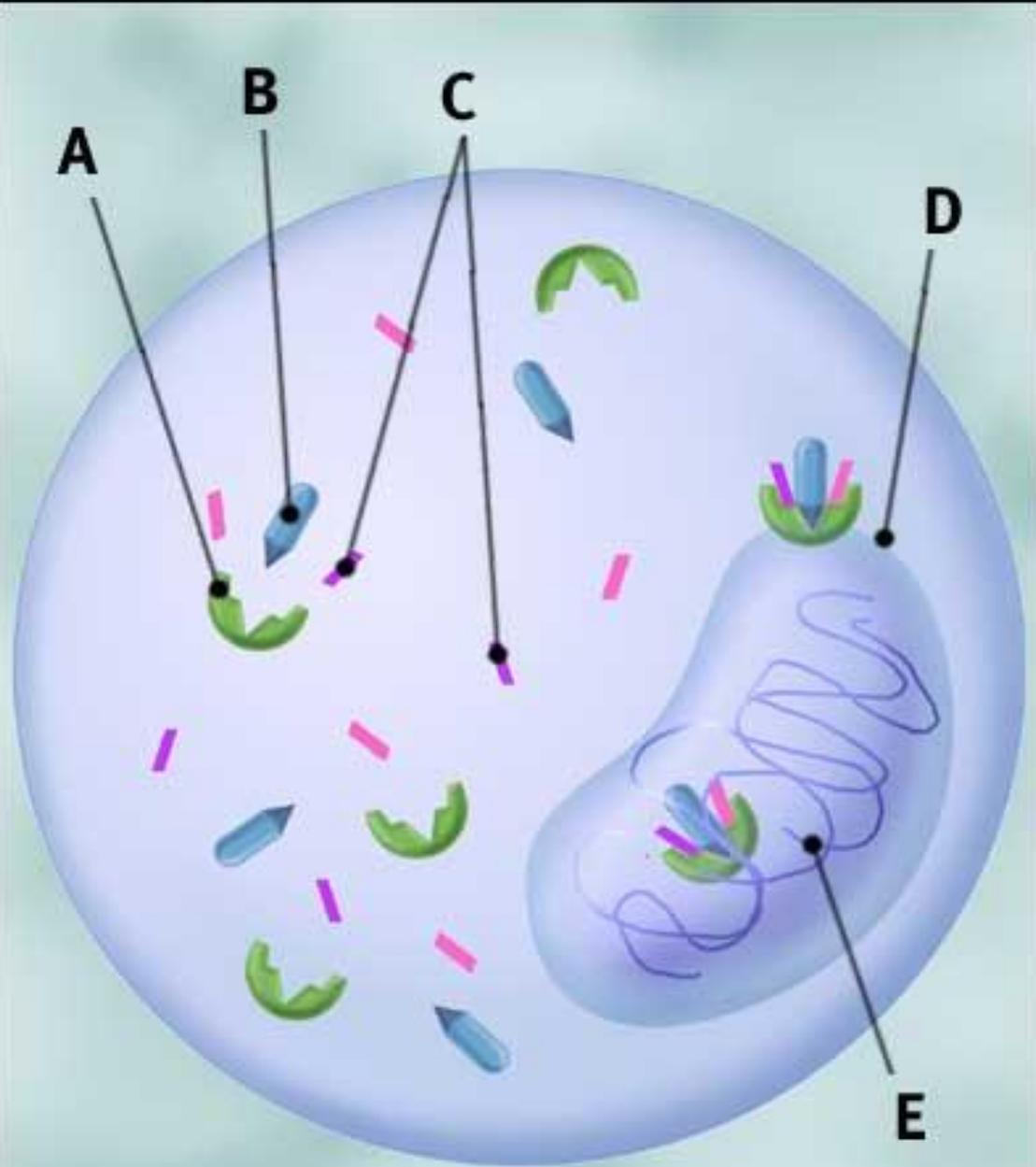
# Her 2/neu

- Oncogene
- 20-30% overexpress gene
  - Aggressive growth
  - Resist hormone or chemo treatment
- IHC or FISH test
- May respond to Herceptin (33%)

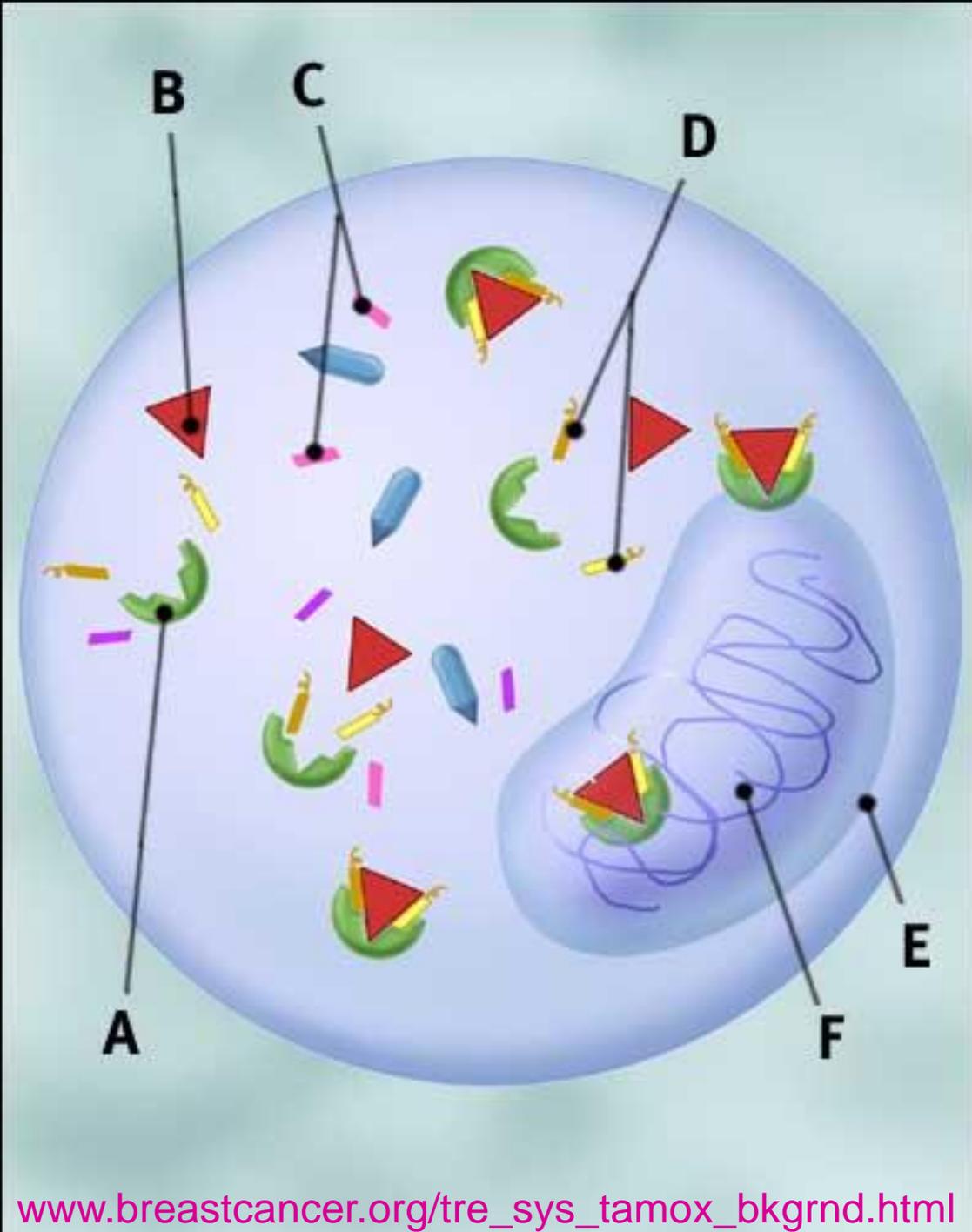


# Hormone Therapy

- Hormone therapy for breast cancer
  - Anti-estrogen: Tamoxifen
  - Aromatase inhibitors: anastrozole, exemestane, letrozole
  - Estrogen-receptor downregulator: Faslodex
- Codes defined in FORDS, pages 175-176



- A** Estrogen receptor
- B** Estrogen
- C** Estrogen helper proteins
- D** Nucleus
- E** DNA genetic material



- A** Estrogen receptor
- B** Tamoxifen
- C** Estrogen helper proteins
- D** Tamoxifen helper proteins
- E** Nucleus
- F** DNA genetic material

# Hematologic Transplant & Endocrine Procedures

- Codes 10 – 12: bone marrow transplant
- Code 20: stem cell harvest and infusion
- Code 30: endocrine surgery and/or endocrine radiation therapy
  - Ovarian ablation by either radiation or surgery
- Codes defined in FORDS, pages 182-183

# Follow-Up

## ASCO Guidelines 1997

- H&P
  - q 3-6 months x 3 years
  - q 6-12 months x 2 years
  - then annually
- Annual mammogram
- Annual pelvic exam
- Monthly BSE
- Patient education about recurrence symptoms
- NO routine lab or markers or other radiology