

# Breast Cancer Overview Part 2

Staging & Surgical Management



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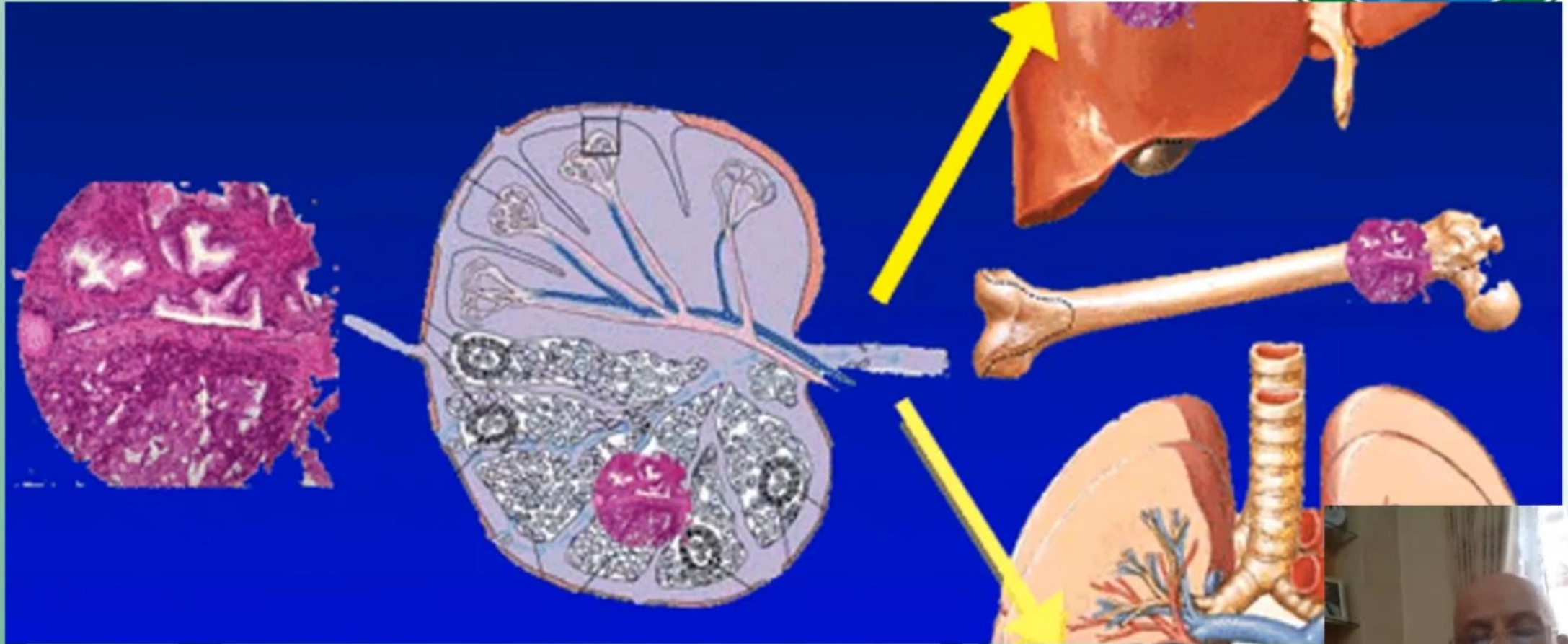
Jordan University

Amman, Jordan



most common site of breast CA mets:  
bone → liver → lung  
→ nervous

11/3/2020





- Staging should be done after doing the proper evaluation
- Of the primary tumor in the breast and axilla by imaging and
- Biopsy. (T&N)

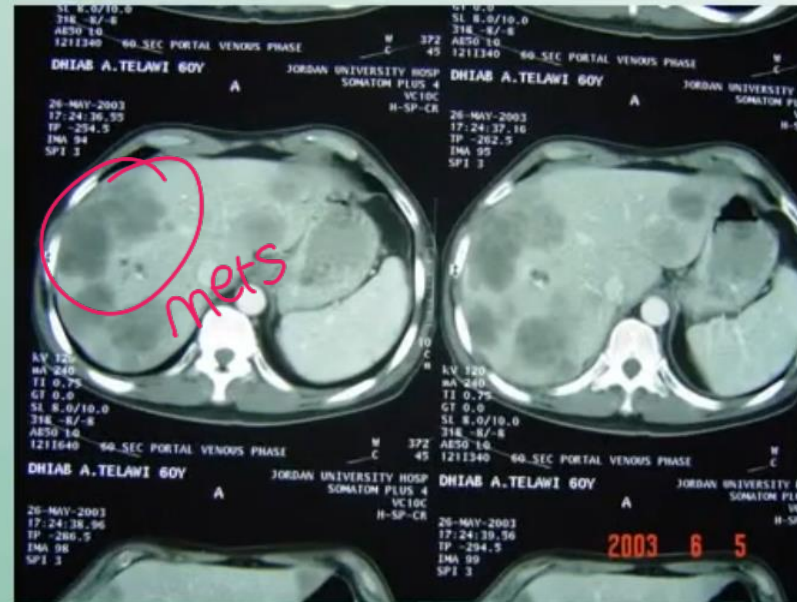




bone CT



Abdominal CT



Chest CT





- CBC count with differential and platelet count (pt may have anemia cuz of BM infiltration)
- Chemistry and renal function studies
- Liver function tests
- Tumor markers CA 15.3

11/3/2020



# Objectives of staging



- Provides useful prognostic information.
- Allows decisions to be made regarding adjuvant therapy.
- Allows comparison of treatment outcomes between different centers.





# TNM Criteria



- **T = Primary Tumor**
  - Tis = carcinoma in situ
  - T1 = less than 2 cm in diameter
  - **T2 = between 2 and 5 cm in diameter**
  - T3 = more than 5 cm in diameter
  - T4 = any size, but extends to the skin or chest wall
- **N = Regional Lymph nodes**
  - N0 = no regional node involvement
  - **N1 = metastasis to movable same side axillary nodes**
  - N2 = metastasis to fixed same side axillary nodes
  - N3 = metastasis to same side internal mammary nodes
- **M = Distant Metastasis**
  - **M0 = no distant metastasis**
  - M1 = distant metastasis

**T2N1M0**



# Clinical Staging



	T	N	M	5-Year Survival
Stage 0	Tis	N0	M0	> 95%
Stage I	T1	N0	M0	Overall = 85%
Stage II				Overall = 66%
(Stage IIA)	T0	N1	M0	
	T1	N1	M0	
	T2	N0	M0	
(Stage IIB)	T2	N1	M0	
	T3	N0	M0	
Stage III				Overall = 41%
(Stage IIIA)	T0	N2	M0	
	T1	N2	M0	
	T2	N2	M0	
	T3	N1, N2	M0	
(Stage IIIB)	T4	Any N	M0	
	Any T	N3	M0	
Stage IV	Any T	Any N	M1	Overall 10%

11/2/2020

15







65% 14:42

# Breast Cancer Staging Calculator

Clinical

Pathological

T

T0

Tis

T1

T2

T3

T4

N

N0

N1mi

N1

N2

N3

M

M0

M1

PROGNOSTIC FACTORS

G1

G2

G3

HER2 +

ER +

PR +

HER2 -

ER -

PR -

IIIC

Anatomic Stage

IIIA

-2

Clinical Prognostic Stage

C

TNM<sup>8</sup> CALCULATOR



1 small



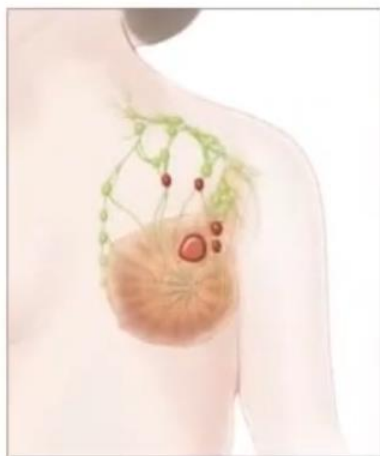
Stage 0



Stage I



Stage II



Stage III

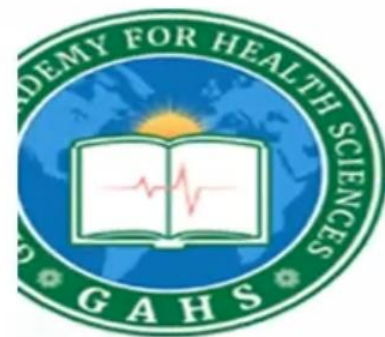
1 & 1 LN

1 & > 1 LN



Stage IV

Mets





## 5-year relative survival rates for breast cancer by stage

- The 5-year relative survival rate for women with **stage I** breast cancer is **close to 100%**.
- For women with **stage II** breast cancer, the 5-year relative survival rate is about **85%**.
- The 5-year relative survival rate for **stage III** breast cancers is about **70%**. But often, women with these breast cancers can be successfully treated.
- Breast cancers that have spread to other parts of the body are more difficult to treat and tend to have a poorer outlook. Metastatic, or **stage IV** breast cancers, have a 5-year relative survival rate of about **20%**. Still, there are often many treatment options available for women with this stage of breast cancer.

Staging → prognosis & management

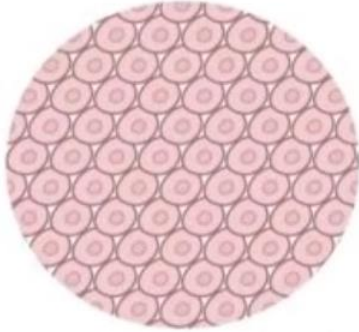
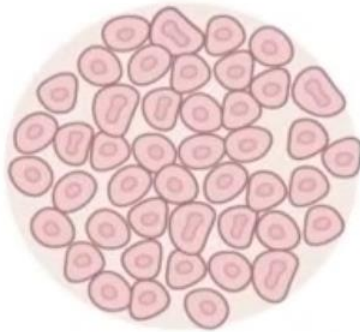
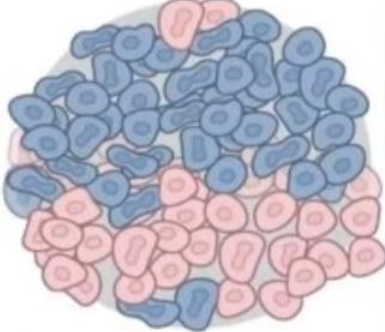
ex: advanced stage → neoadjuvant then surgery  
triple negative → neoadjuvant then surgery  
early stage → surgery then adjuvant





# Histological Grades



Prognosis well differentiated	moderately differentiated	poorly differentiated	Grade
<p data-bbox="308 478 443 515">Grade 1</p>  <p data-bbox="198 975 555 1032"><b>Glandular/Tubular Differentiation:</b> &gt;75% of tumor forms glands</p> <p data-bbox="198 1065 524 1182"><b>Nuclear Pleomorphism:</b> Uniform cells with small nuclei similar in size to normal breast epithelial cells</p> <p data-bbox="198 1215 517 1300"><b>Mitotic Count:</b> &lt; 7 mitoses per 10 high power fields</p>	<p data-bbox="810 478 945 515">Grade 2</p>  <p data-bbox="690 975 1047 1032"><b>Glandular/Tubular Differentiation:</b> 10% to 75% of tumor forms glands</p> <p data-bbox="690 1065 1065 1210"><b>Nuclear Pleomorphism:</b> Cells larger than normal with open vesicular nuclei, visible nucleoli, and moderate variability in size and shape</p> <p data-bbox="690 1243 1026 1329"><b>Mitotic Count:</b> 8-15 mitoses per 10 high power fields</p>	<p data-bbox="1314 478 1449 515">Grade 3</p>  <p data-bbox="1200 975 1556 1032"><b>Glandular/Tubular Differentiation:</b> &lt;10% of tumor forms glands</p> <p data-bbox="1200 1065 1498 1182"><b>Nuclear Pleomorphism:</b> Cells with vesicular nuclei, prominent nucleoli, marked variation in size and shape</p> <p data-bbox="1200 1215 1536 1300"><b>Mitotic Count:</b> &gt; 16 mitoses per 10 high power fields</p>	

Grade I tumors have a total score of 3-5

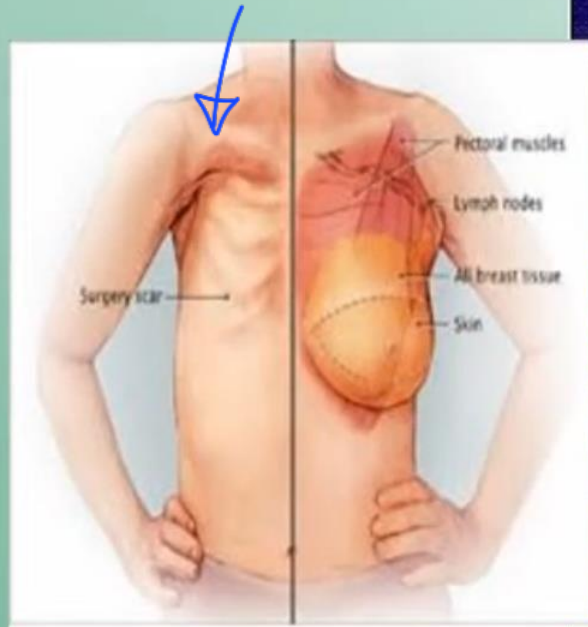
Grade II tumors have a total score of 6-7

Grade III tumors have a total score of 8-9





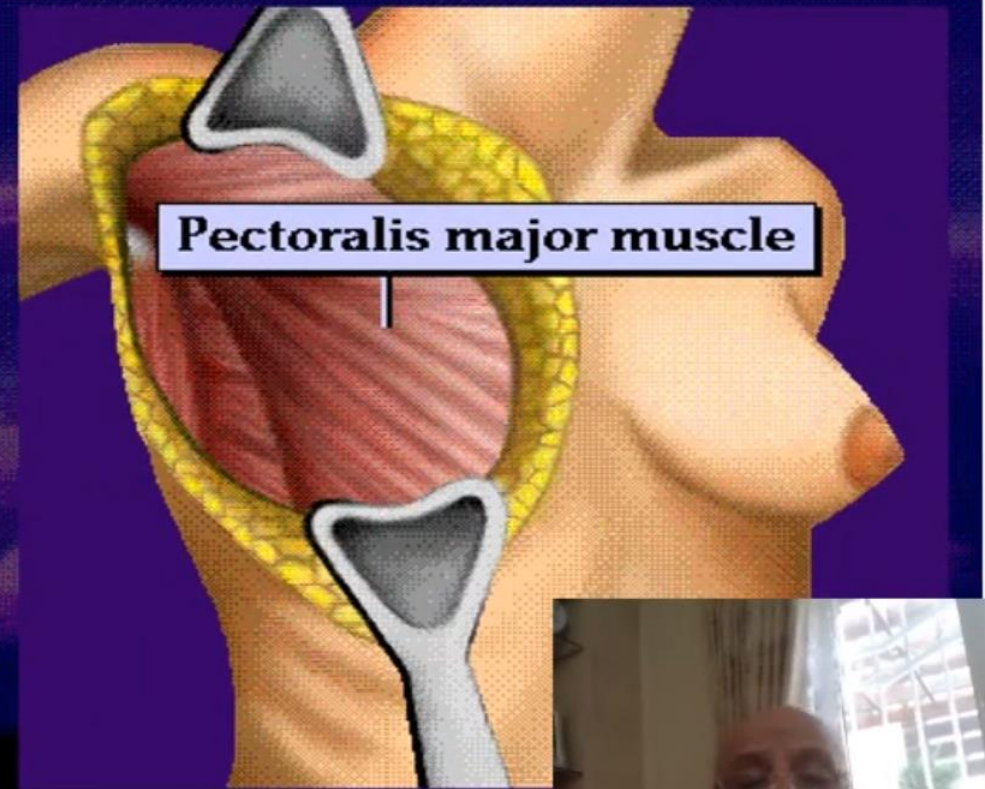
they used to do **radical mastectomy** till the 70s,  
CUZ OF: CA not cured mostly, Shoulder morbidity,  
loss of anterior axillary folds, No thing  
to protect pleura except skin & ribs & intercostal  
muscles (thin)



## Radical mastectomy

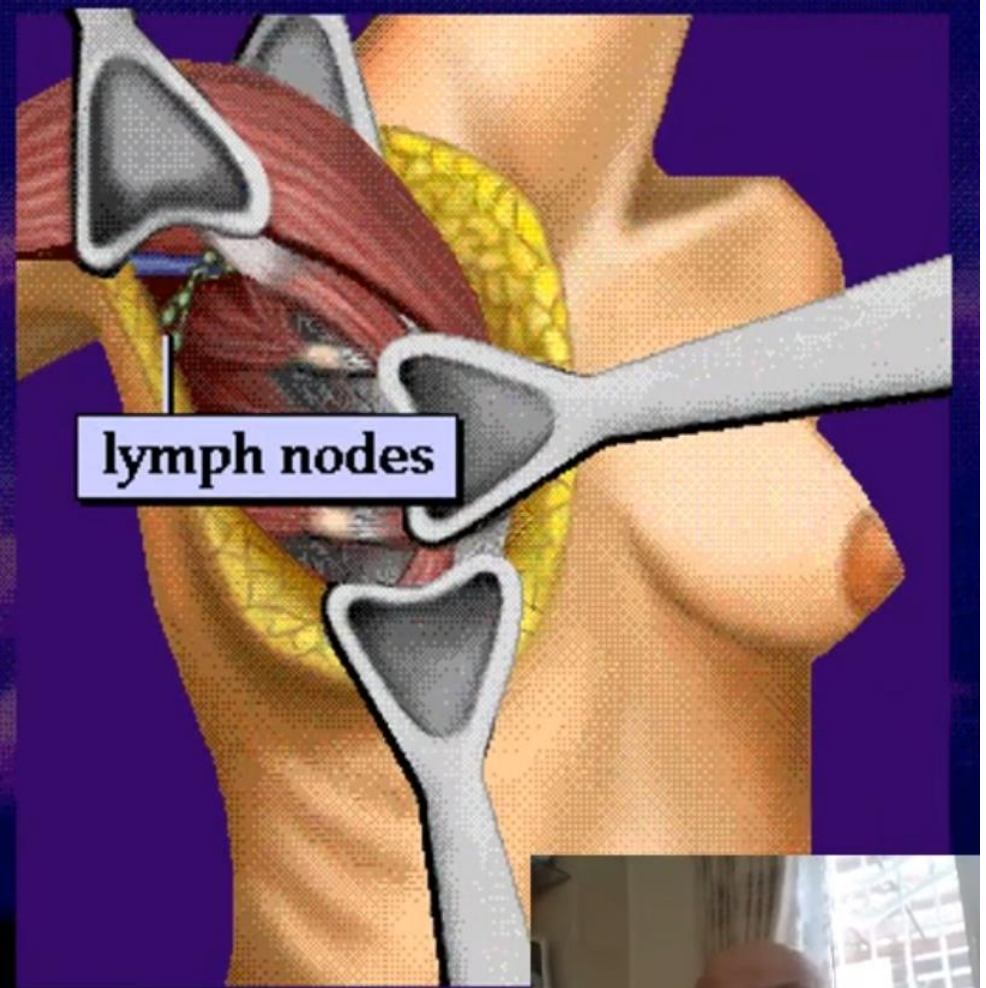
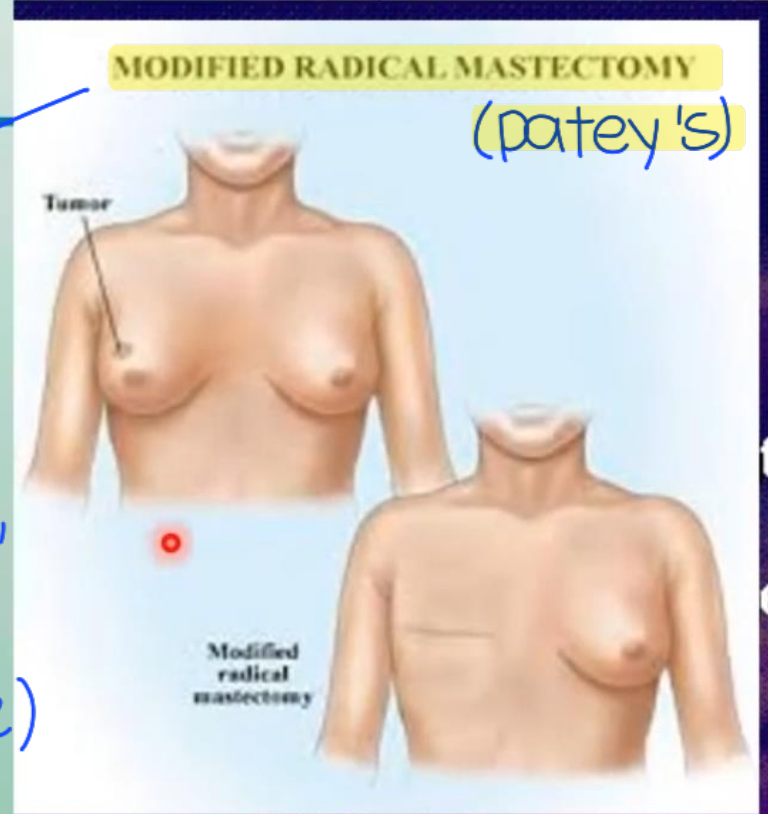
In radical mastectomy the muscles of the chest (e.g., **pectoralis major** and **pectoralis minor**) along with the breast and **lymph nodes** are all removed.

Radical mastectomy is now rarely performed. It is usually reserved for very large **cancers** that have grown into the muscle.



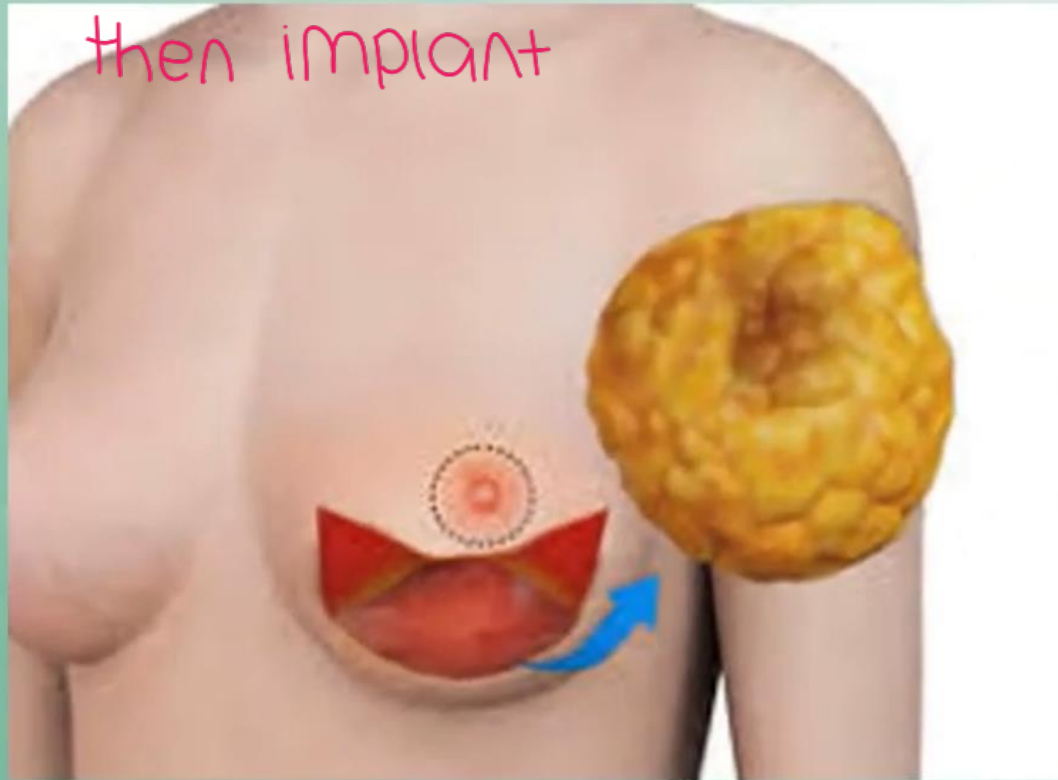


We don't  
remove muscles  
(less morbidity  
& better shape,  
same rate of  
local recurrence)





skin & nipple sparing  
then implant



skin sparing then implants  
(tumor involving nipple)



modified radical mastectomy then tram flap  
(transverse rectus abdominis myocutaneous flap)



We take excess skin from lower abdomen, fat, part of muscle to reconstruct breast

(long procedure, higher morbidity than implants)







tram flap with nipple  
& areola reconstruction





latssimus flap has higher survival & less complications than other flaps but loss of latssimus function (atrophy) & scarring (need graft)



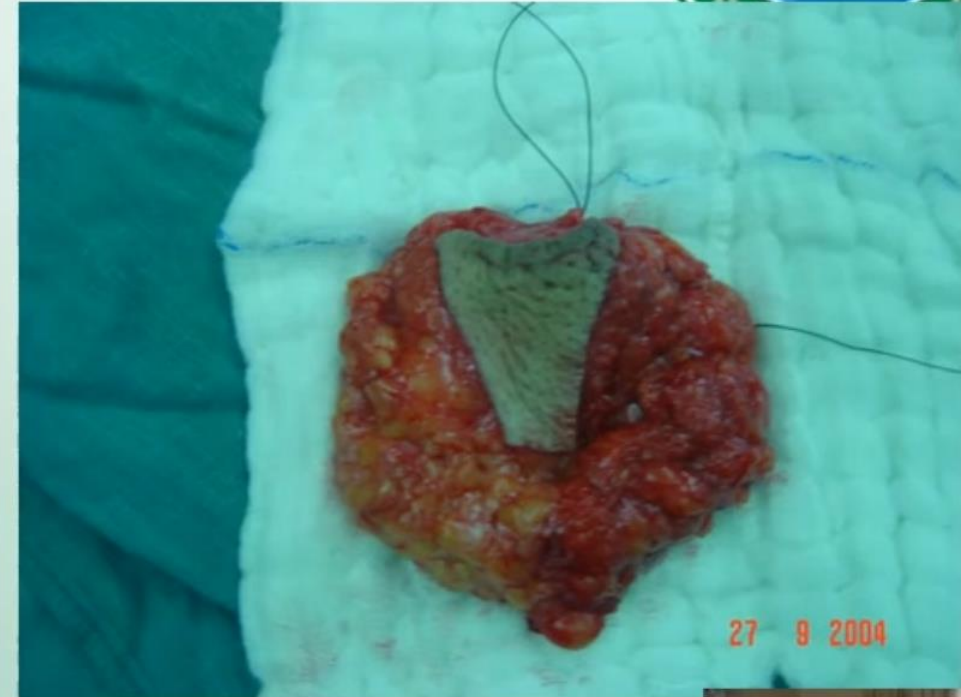
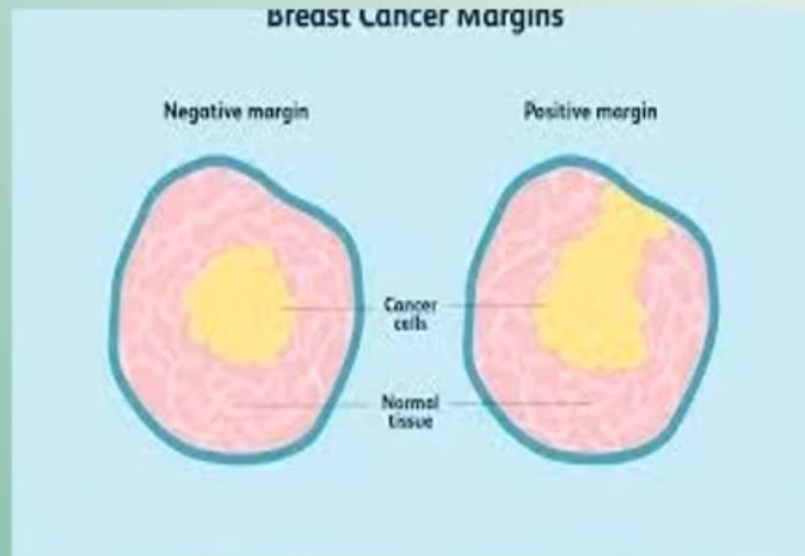
## Latssimus flap

Large Defects in Medium-Sized or Small Breasts



most people need an implant behind the flap to keep volume & shape of breast





## wide local exision

(good if pt has low tumor: breast ratio  
 ex: 2-3 cm tumor → So we remove tumor  
 with a safety margin), same recurrence rate  
 as radical but with better shape & wellbeing





# Types of Breast Conserving Operations



→ (leaves a Scar & Areola-nipple complex distortion)

- **Segmental** mastectomy, quadrectomy, Partial mastectomy

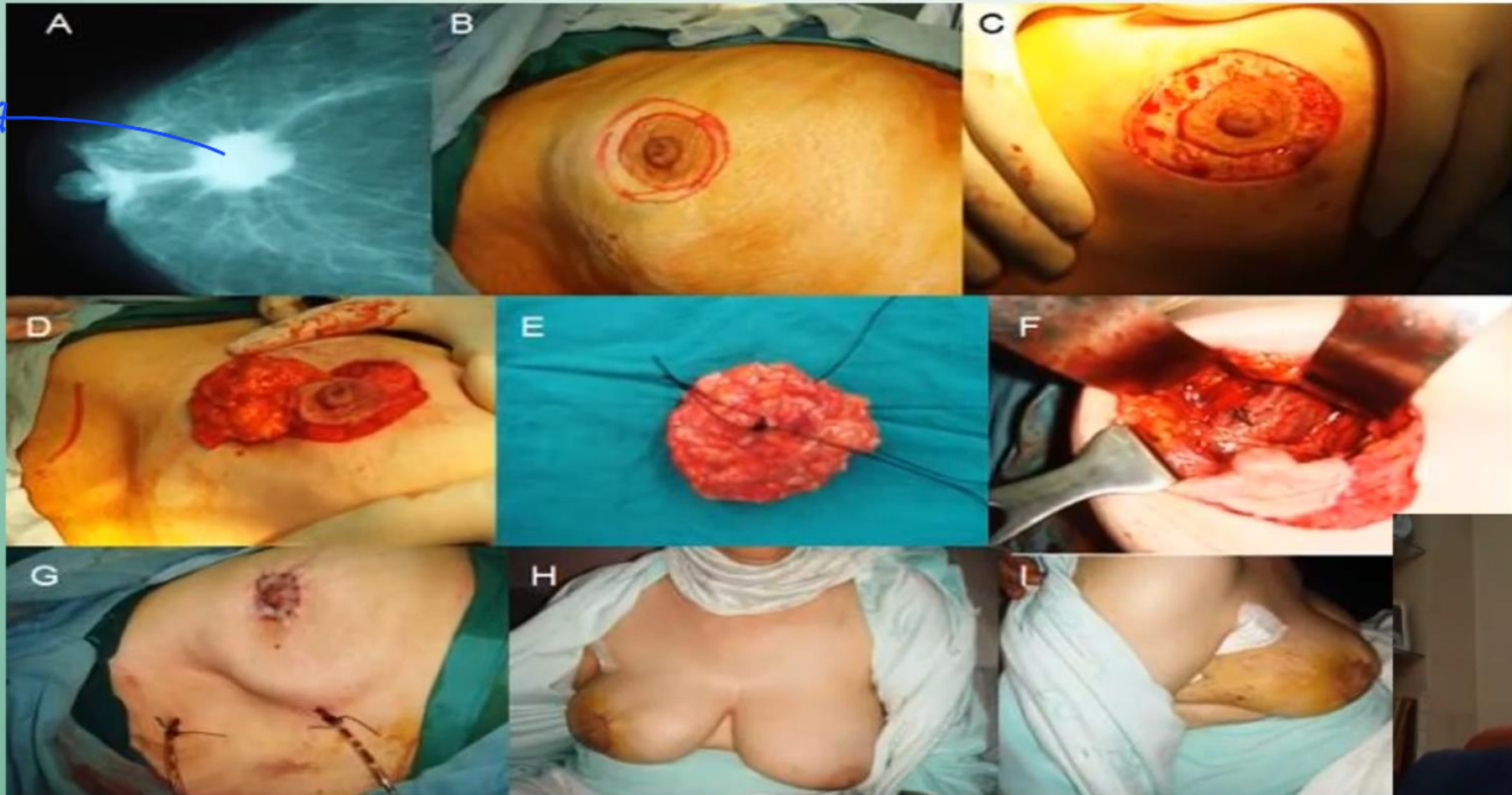




donut mastopexy lumpectomy → donut shaped removal of dermis around nipple leaving deep dermis in place then remove tumor then gather surrounding skin & suture it to areola



Central tumor with a tail to the nipple





wide local exision then local flap (from lateral side of chest wall)



**Sentinel LN biopsy** : inject patent blue dye subareolar or around tumor, after 10 mins we take Sentinel LN & examine it , if positive we complete axillary dissection (to avoid unnecessary axillary dissection which carries long term morbidity especially if pt had radiotherapy after surgery → edema, hyposthesia, Shoulder morbidity)

