



Management of Breast Cancer – An update

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REGISTRAR
GENERAL SURGERY



Incidence of Breast cancer in Bangladesh

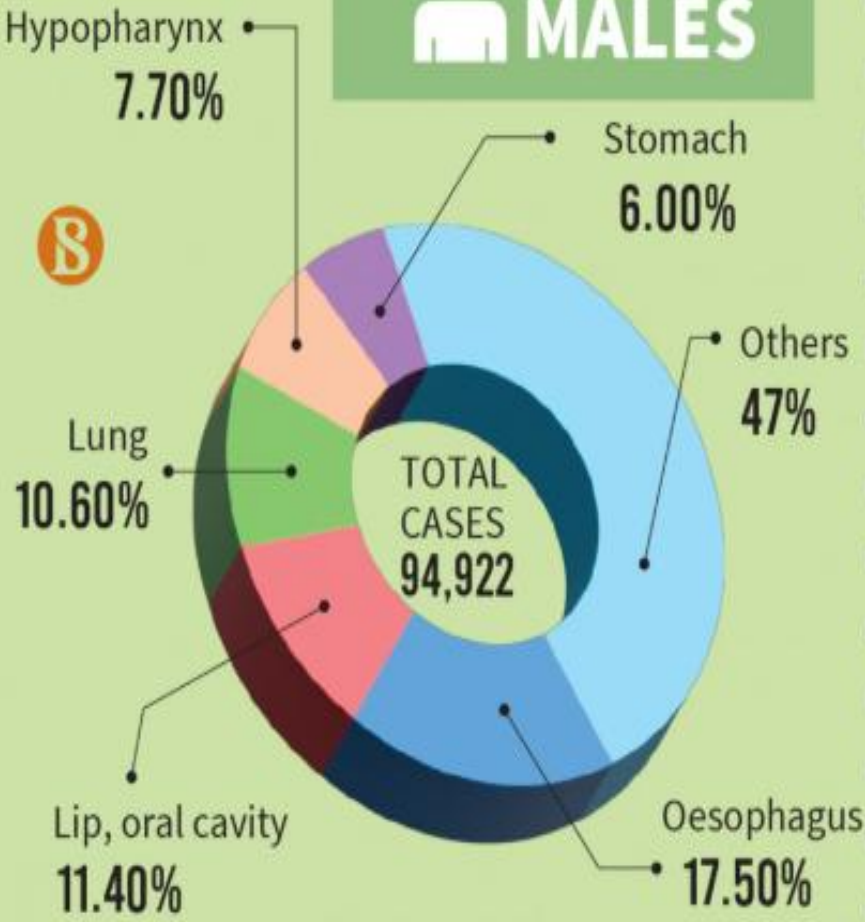
Prevalence: 22.5 per 100,000 females of all ages.

Highest prevalence: In women aged 15-44 years, at 19.3 per 100,000.

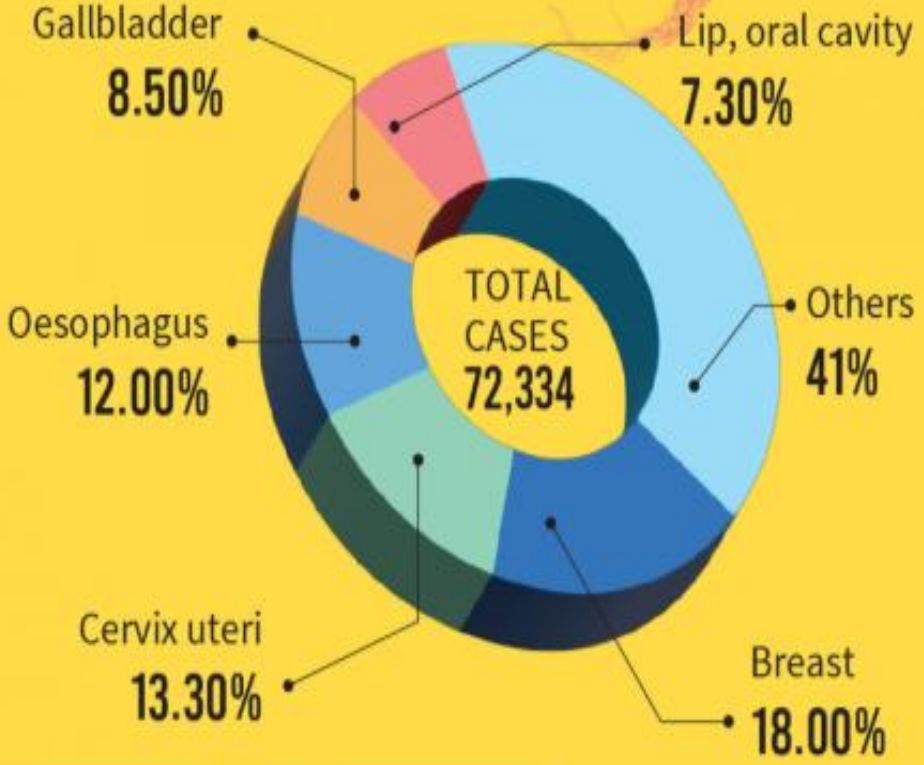
➤ **Leading cause of death:** Breast cancer is the leading cause of cancer-related death in women in Bangladesh.

MOST COMMON CANCERS IN BANGLADESH IN 2022

MALES



FEMALES



Deaths from cancer in Bangladesh in 2022

Total 116,598



Male 68,591

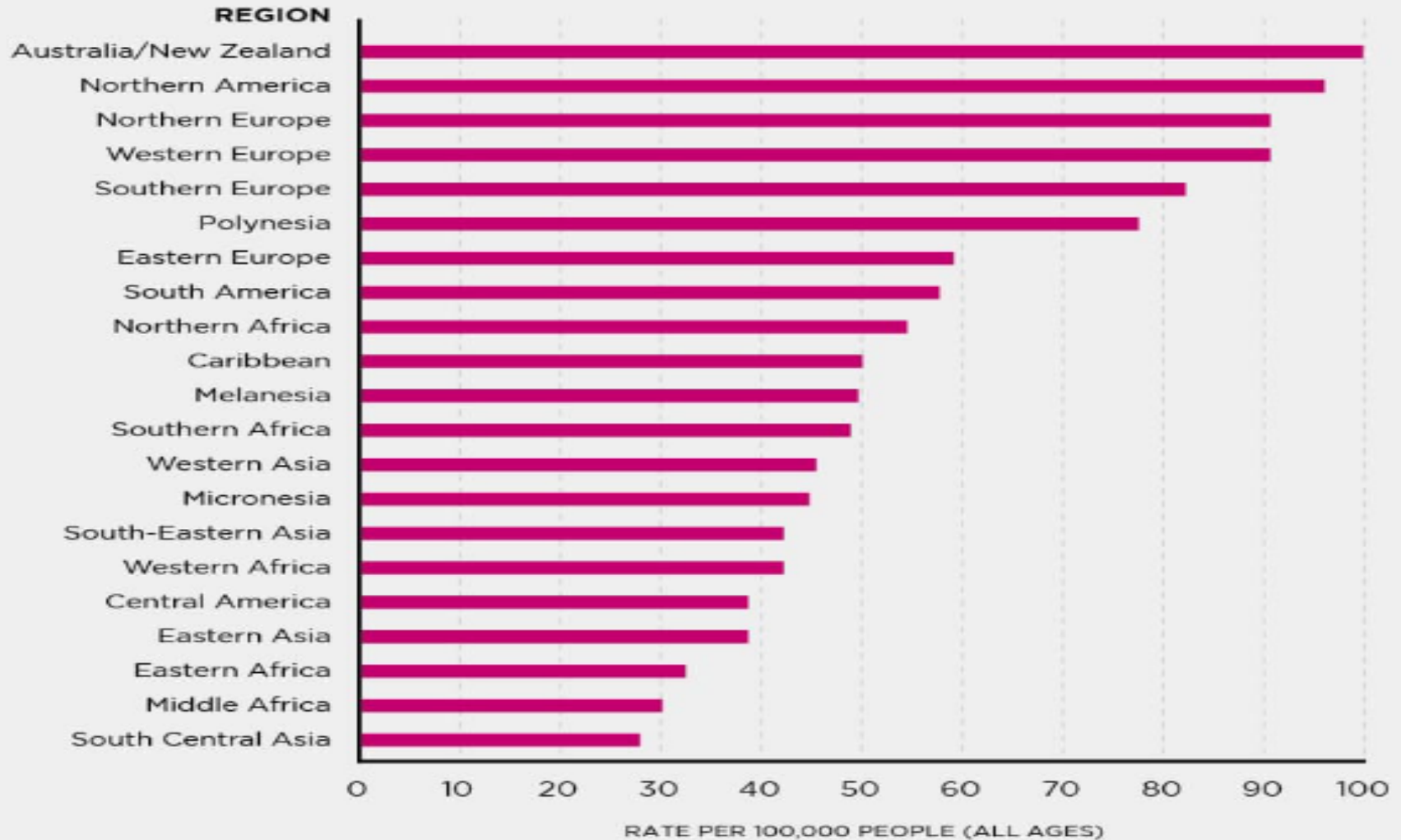


Female 48,007

Source International Agency for Research on Cancer

World Wide Incidence

BREAST CANCER INCIDENCE WORLDWIDE





Breast cancer burden

WHO-2022

- In 2022, there were an estimated 20 million new cancer cases and 9.7 million deaths in world wide

A close-up photograph of a person's hand holding a bright orange sticky note. The note is held in the center of the frame, and the word "WHY?" is written on it in bold, black, hand-drawn capital letters. The background is dark and out of focus, showing what appears to be a person's torso in a dark shirt. The lighting is soft, highlighting the texture of the sticky note and the skin of the hand.

WHY ?




Factors contributing to the rise

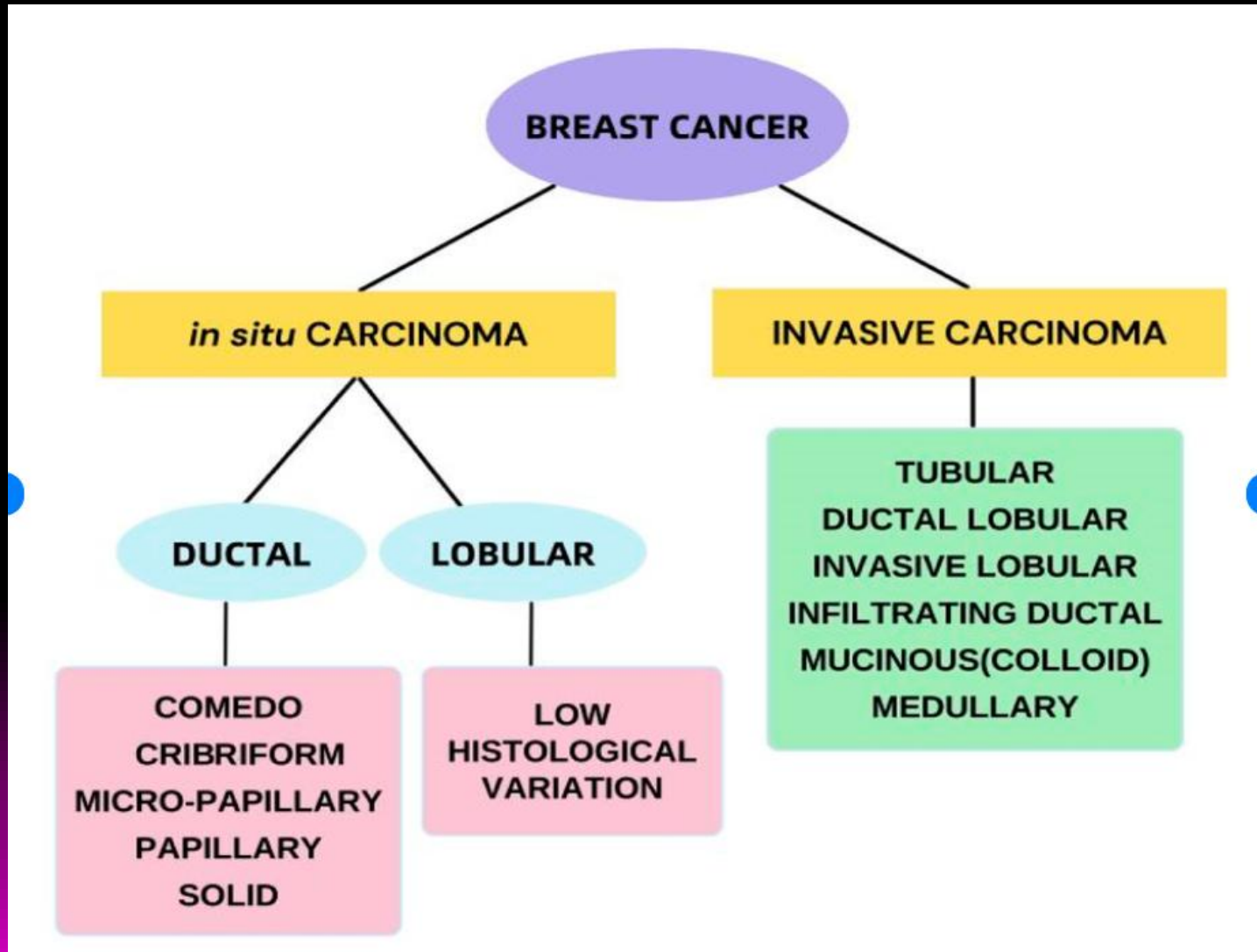
- Lack of awareness
- No screening
- Inadequate medical facilities
- Improper treatment
- And a lack of motivation for institutional care are some factors that contribute to the increasing incidence.



Risk factor

- Early menarche
 - Late menopause
 - Nulliparity
 - Use of hormone replacement therapy
 - Obesity
 - Family H/O breast cancer
 - Presence of breast cancer gene-BRCA-1, BRCA-2g(are advised to get prophylactic mastectomy done)
- 

Types of breast cancer



Molecular Classification

- Luminal A: ER+ve, PR+ve, HER-2-ve, Ki 67 low (endocrine therapy)
- Luminal B: ER+ve, PR+ve, HER-2-ve, Ki 67 high (combination of endocrine therapy and chemotherapy)
- HER-2 Positive: More aggressive (Trastuzumab)
- Triple negative: Most aggressive, Basal Type (Chemotherapy)



Symptoms of breast cancer

Lump

Nipple discharge

Nipple retraction

Skin tethering

Peude orange

Skin ulceration

Symptoms of metastasis

Inflammatory breast cancer



Visible Lump



Nipple ulceration with lump



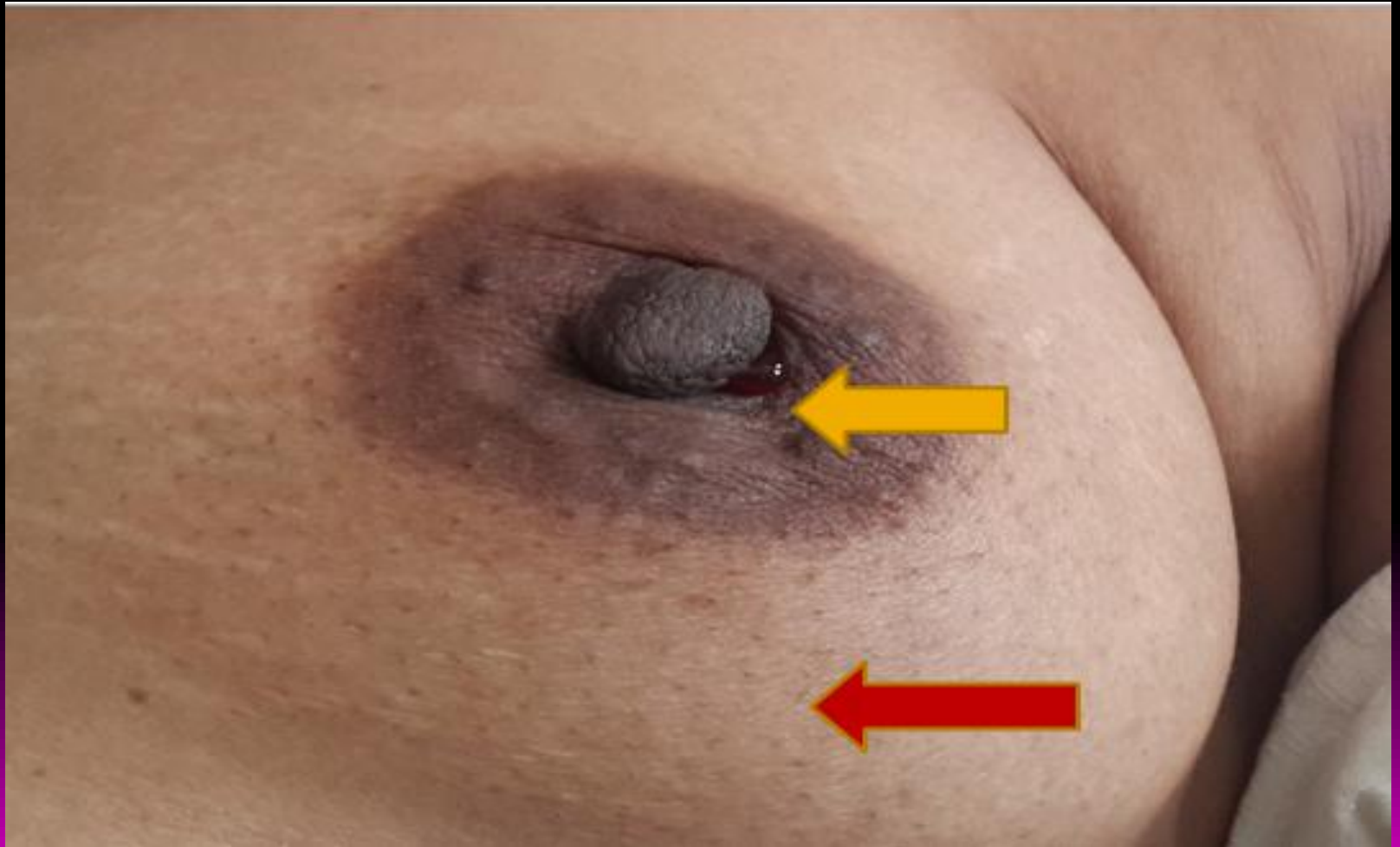
Peude-orange



Gross skin involvement



Nipple discharge only



Male breast Ca



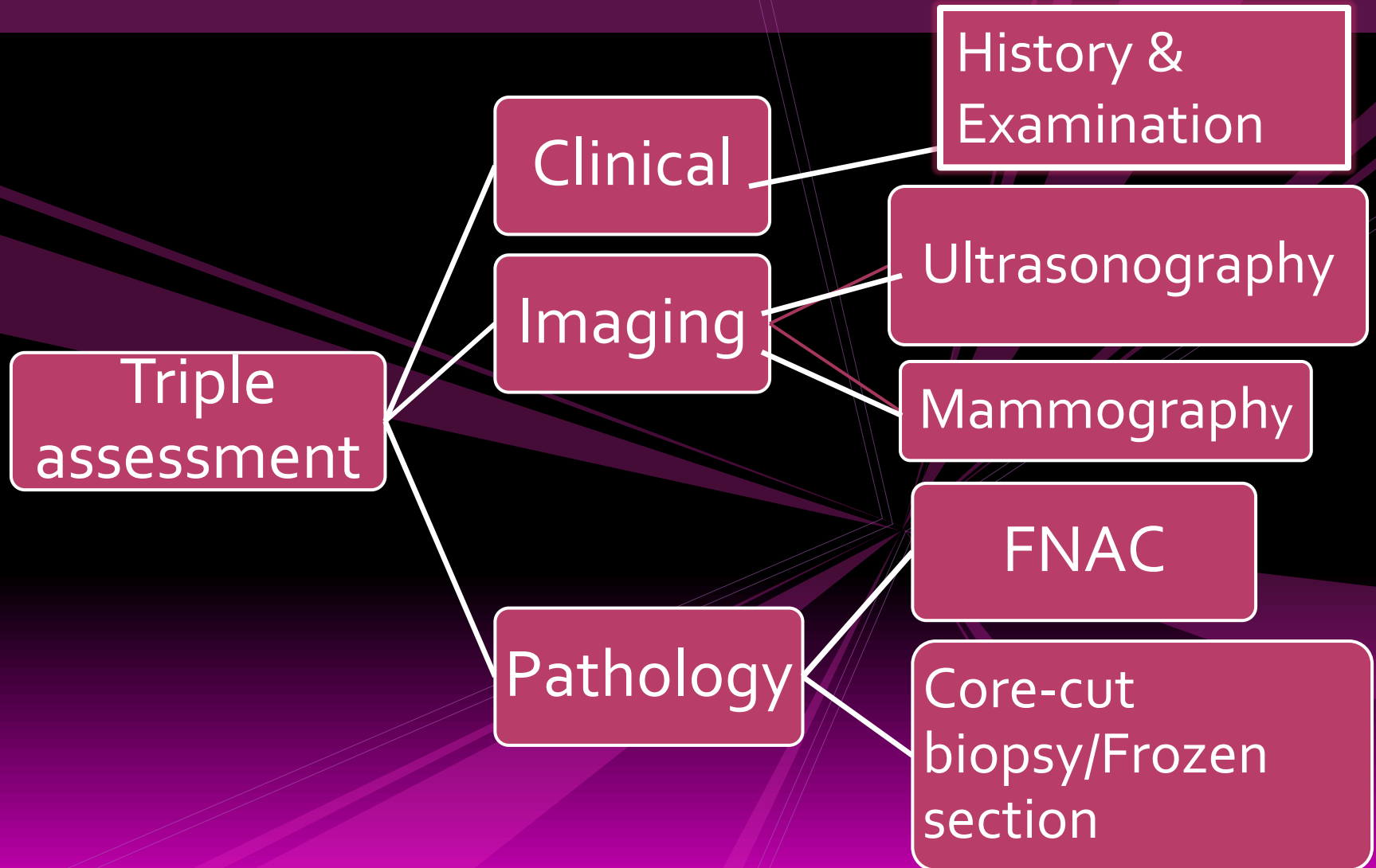
Neglected case of Ca breast





Diagnosis

Triple assessment




Mammography





Signs on Mammography

2 views on mammography-Cranio-caudal and
Oblique view

- Abnormal opacity
 - Spiculated (spiky) edges
 - Skin tethering
 - Distortion or abnormal architecture
 - Micro-calcification
- 

Visual of mammography



Normal
mammogram



Benign cyst
(not cancer)

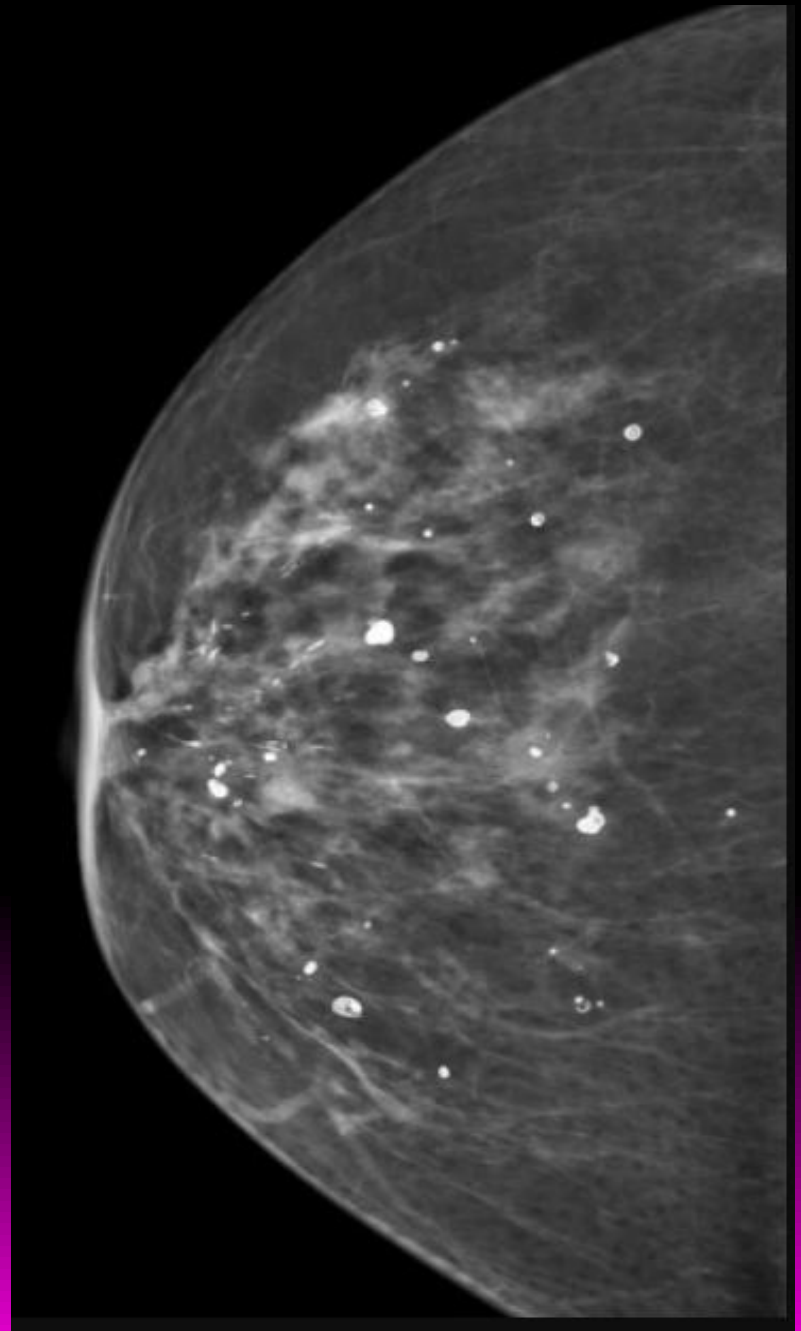


Cancer

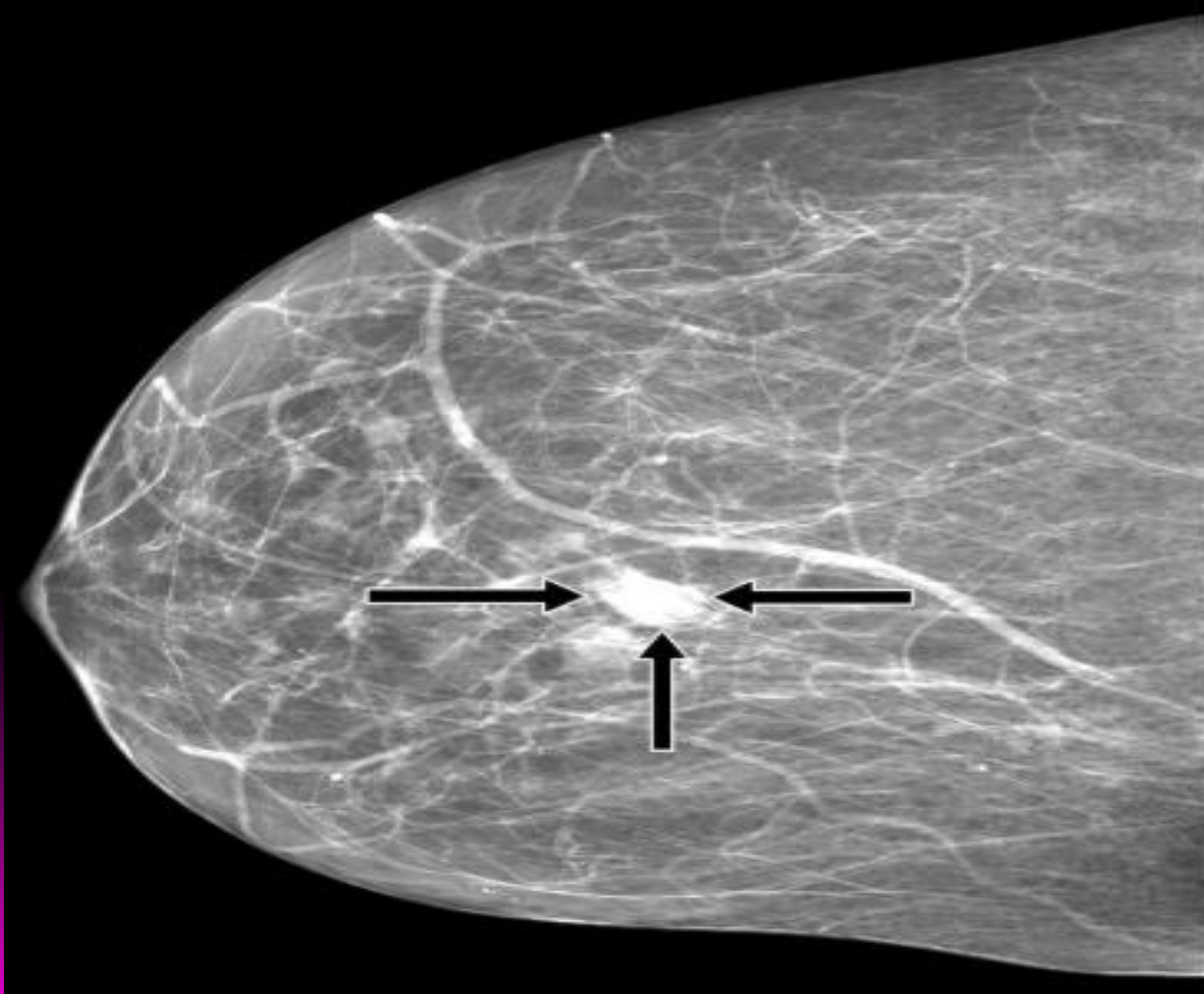
Spiculated breast mass



Micro- calcification



Architectural Distortion



True cut/core cut biopsy



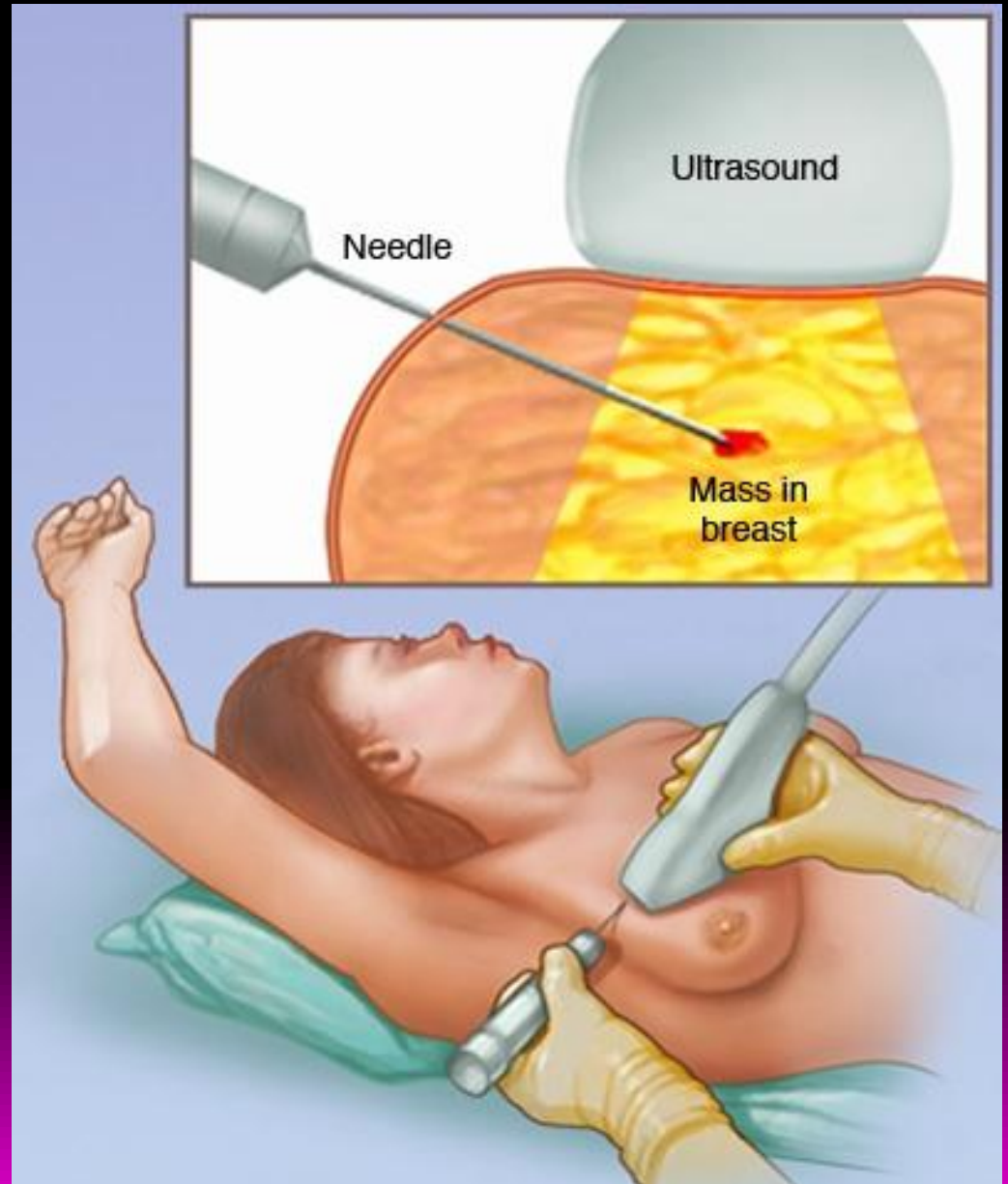
True cut



True cut biopsy

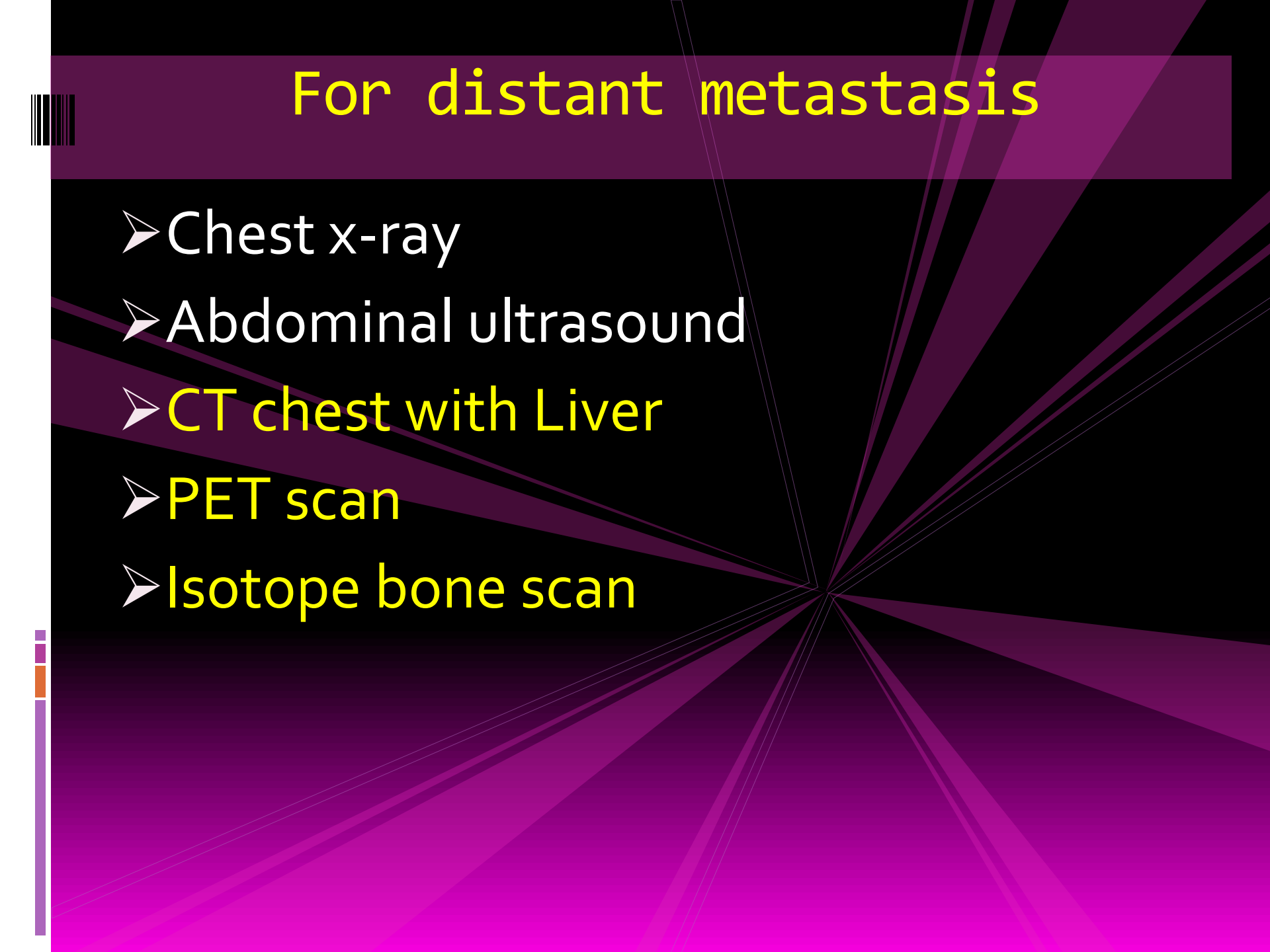



Sono-guided breast biopsy





For distant metastasis

- Chest x-ray
 - Abdominal ultrasound
 - CT chest with Liver
 - PET scan
 - Isotope bone scan
- 
- 

Lung metastasis



Bony metastasis causing pathological fracture



Staging

Staging

T---T₁ - < 2 cm

T₂ - 2-5 cm

T₃ - 5-10 cm

T₄ - >10cm or skin or chest involvement

N-- N₀ -No axillary LN

N₁---Palpable but mobile LN

N₂--Fixed axillary LN

N₃—Supraclavicular LN

M-- M₀— No distant metastasis

T1

2 cm or less

T2

2–5 cm

T3

5 cm or more

T4

Any size tumor growing into the chest wall

Clinical classification

Early breast cancer-T₁₋₃, N₀₋₁, M₀


Advanced- T₄, N₂₋₃, M₁



Treatment



Treatment modalities

- Surgery
 - Radiotherapy
 - Chemotherapy-
 - Adjuvant
 - Neoadjuvant
 - Hormone-therapy
 - Biological therapy
- 



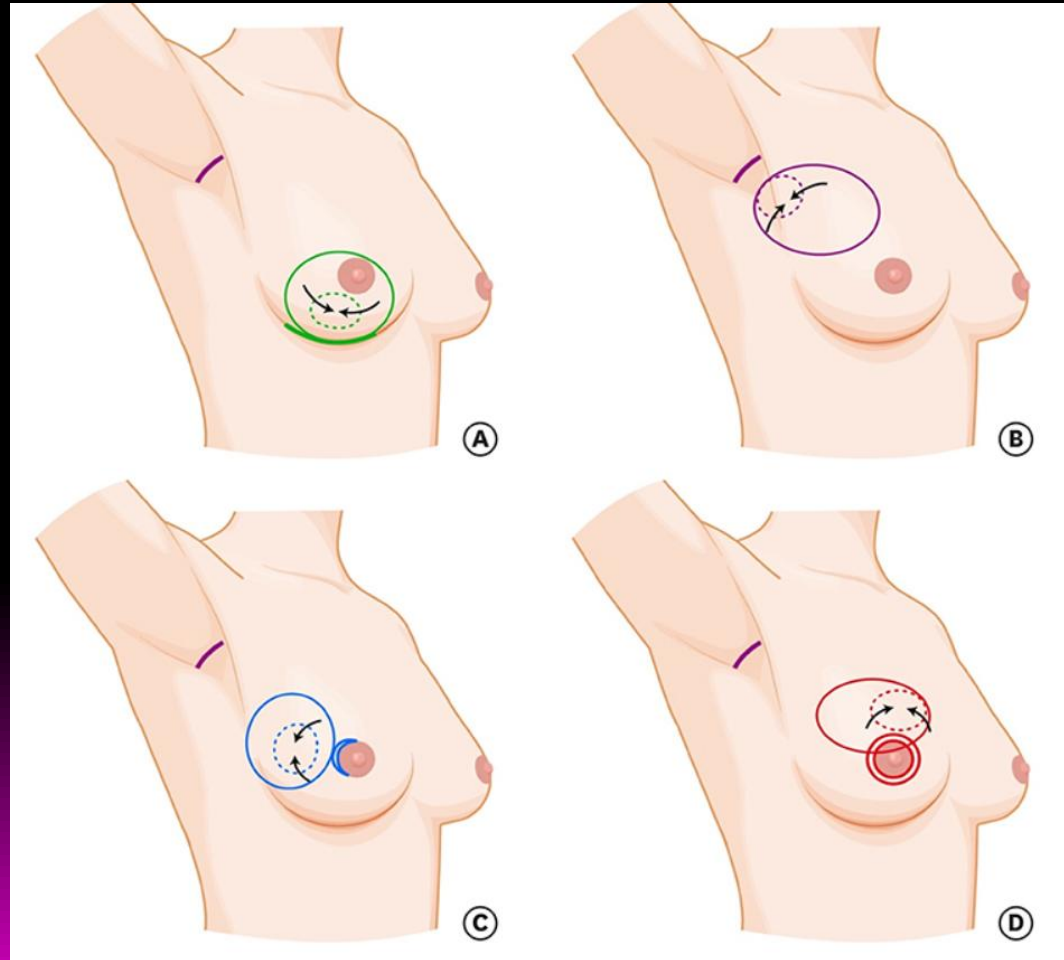
SURGERY



Modern advancement in Surgery

- Improved Precision and Minimal Invasion:
 - Breast conserving surgery that includes oncoplastic technique
 - Sentinel Lymph Node Biopsy
- Nipple-Sparing Mastectomy
- Breast Reconstruction : DIEP Flap, TRAM flap

Breast conserving surgery



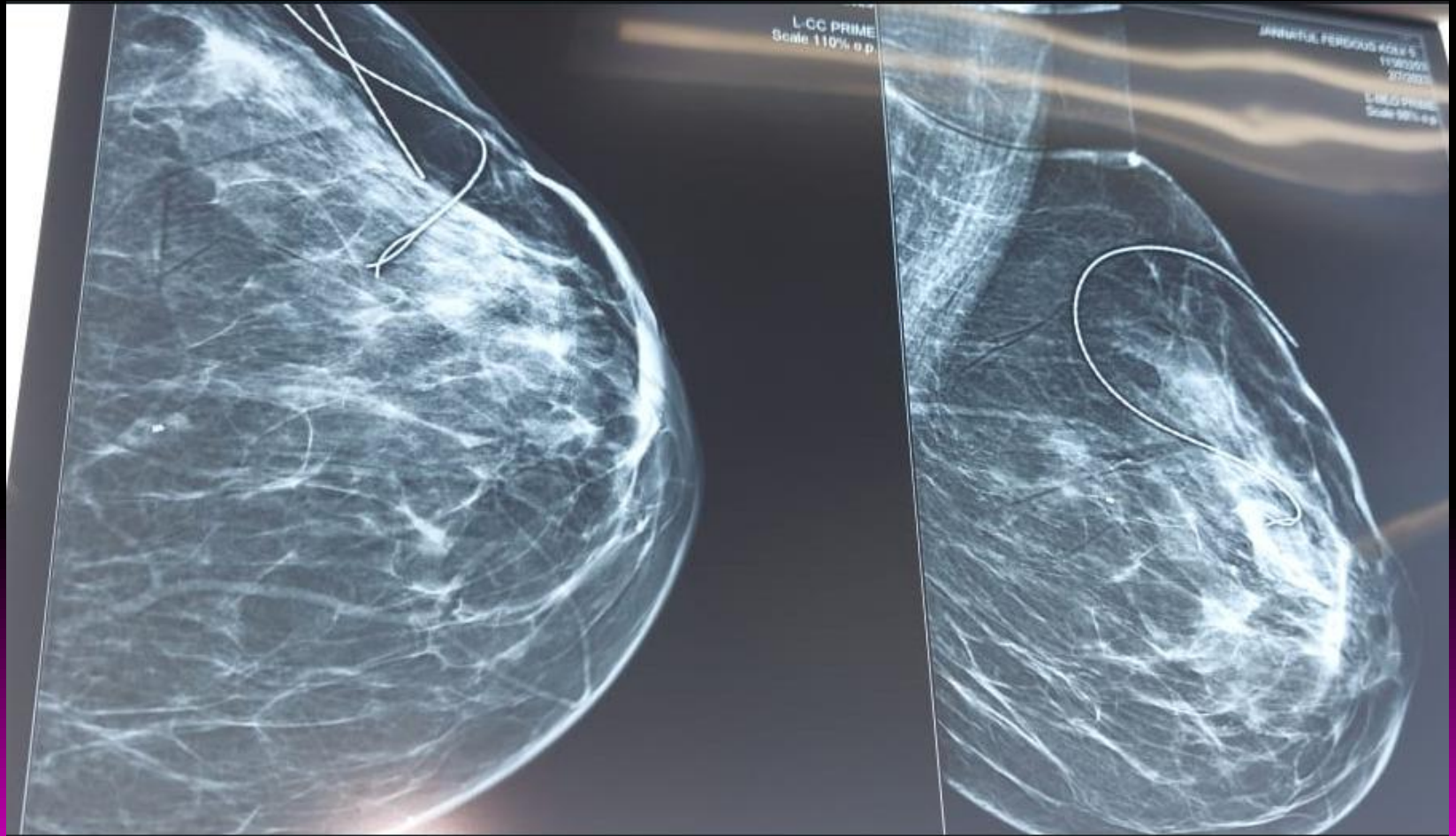
Breast Conserving Surgery



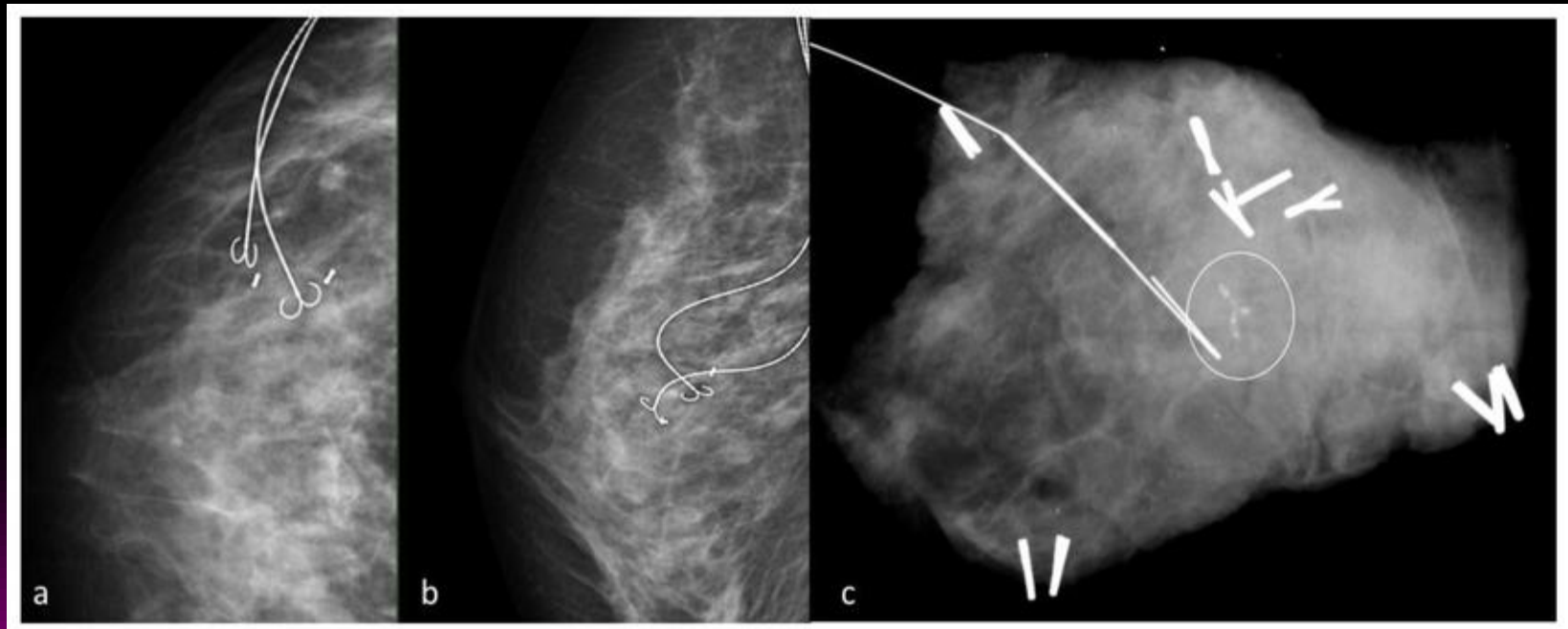
After NACT in
non palpable
mass- wire
guided
localization



Wire guided localization



Wire guided biopsy of mammography detected cancer



Breast Conserving Surgery

- Wide excision(Excision of the lump with 1 cm healthy margin)
- Quadrantectomy (removal of a quadrant of breast)

Breast preservation possible

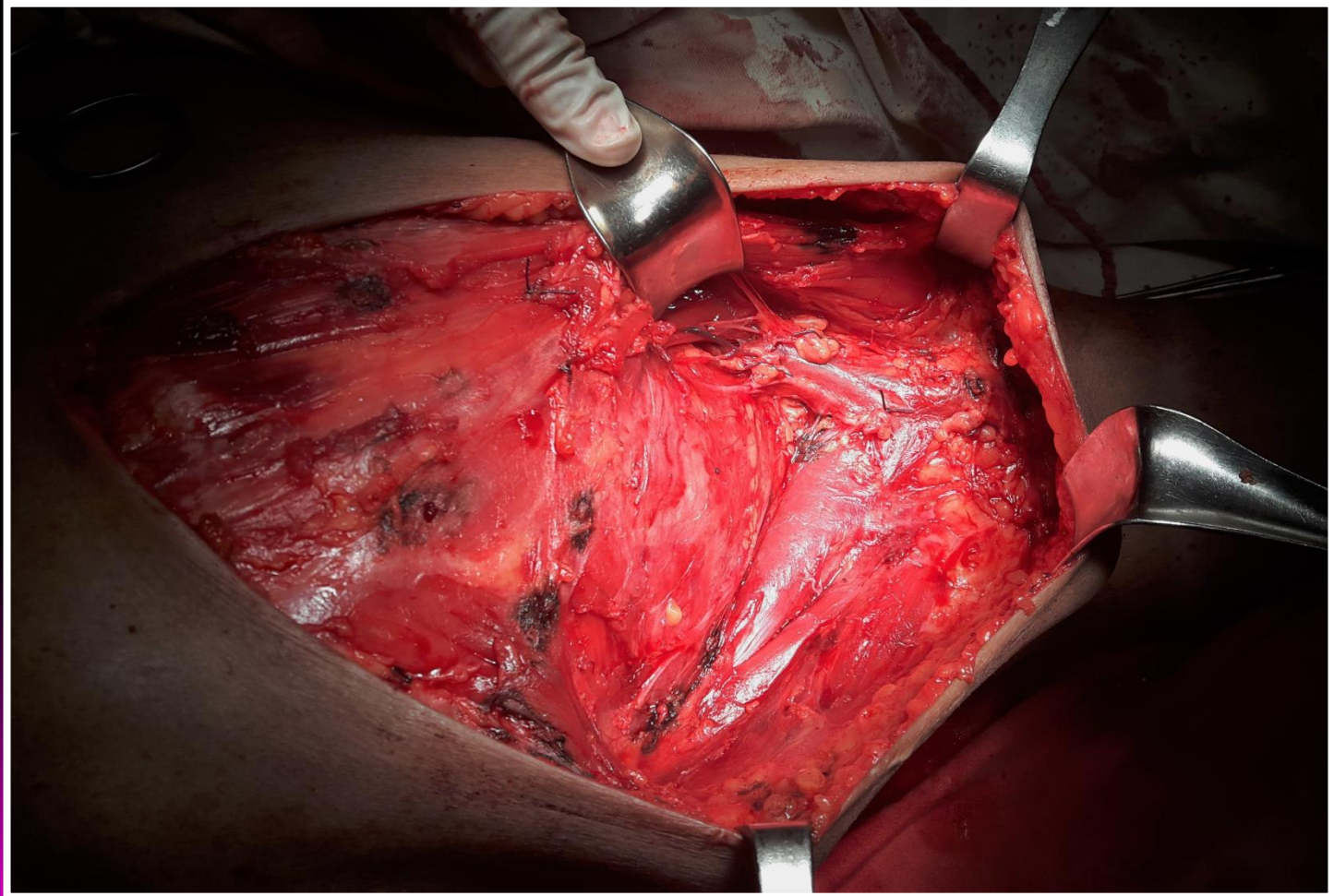
if

- Lump size is $<4\text{cm}$ (T₁₋₂)
- Young women
- Large breast
- Radiotherapy service available
- Patient's wish
- **Local recurrence more**

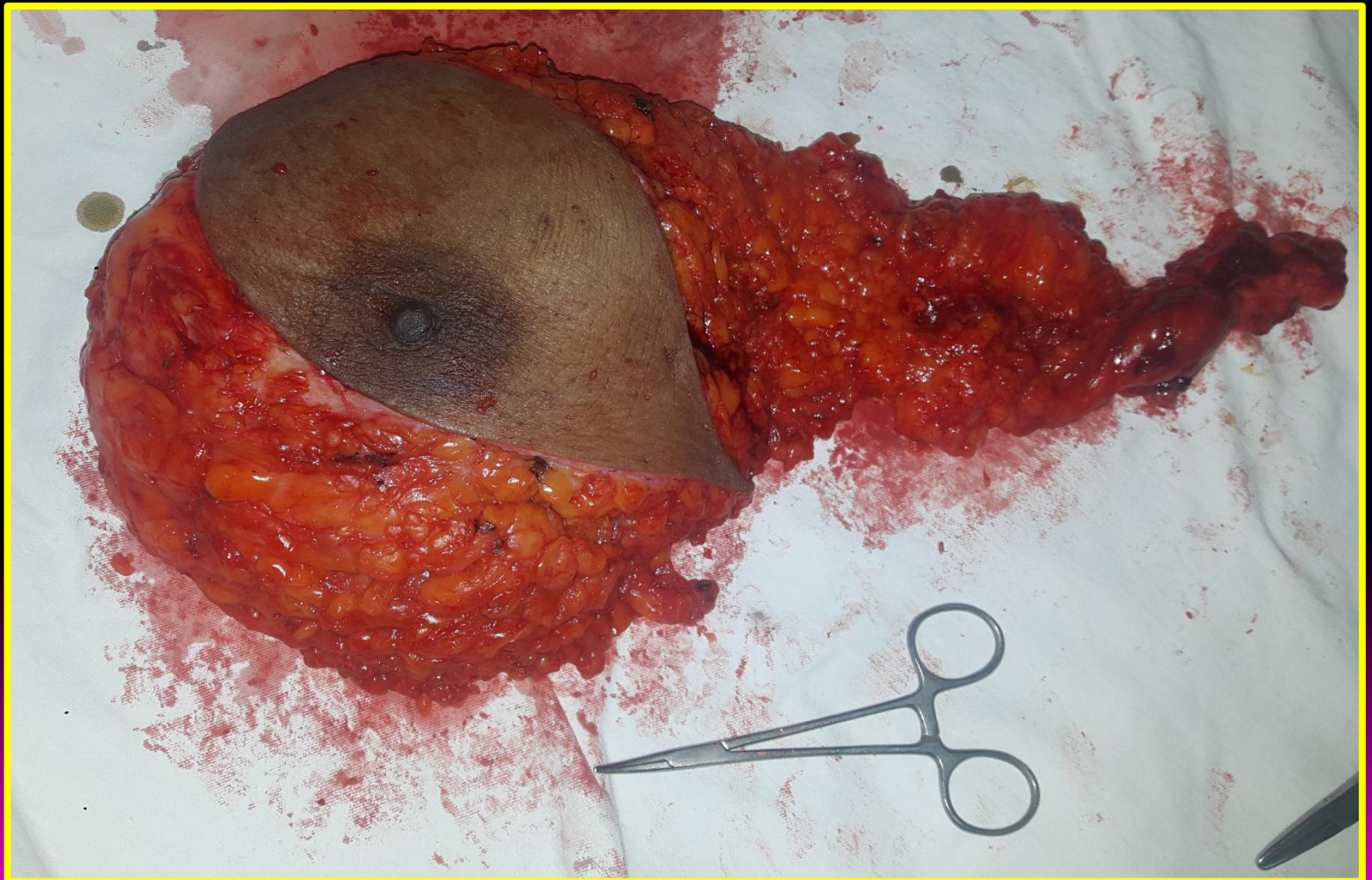
Mastectomy

- Total Mastectomy+ Axillary clearance
- Modified radical mastectomy
- (removal of whole breast , clearance of axilla and pectoralis minor)
- Radical mastectomy is obsolete

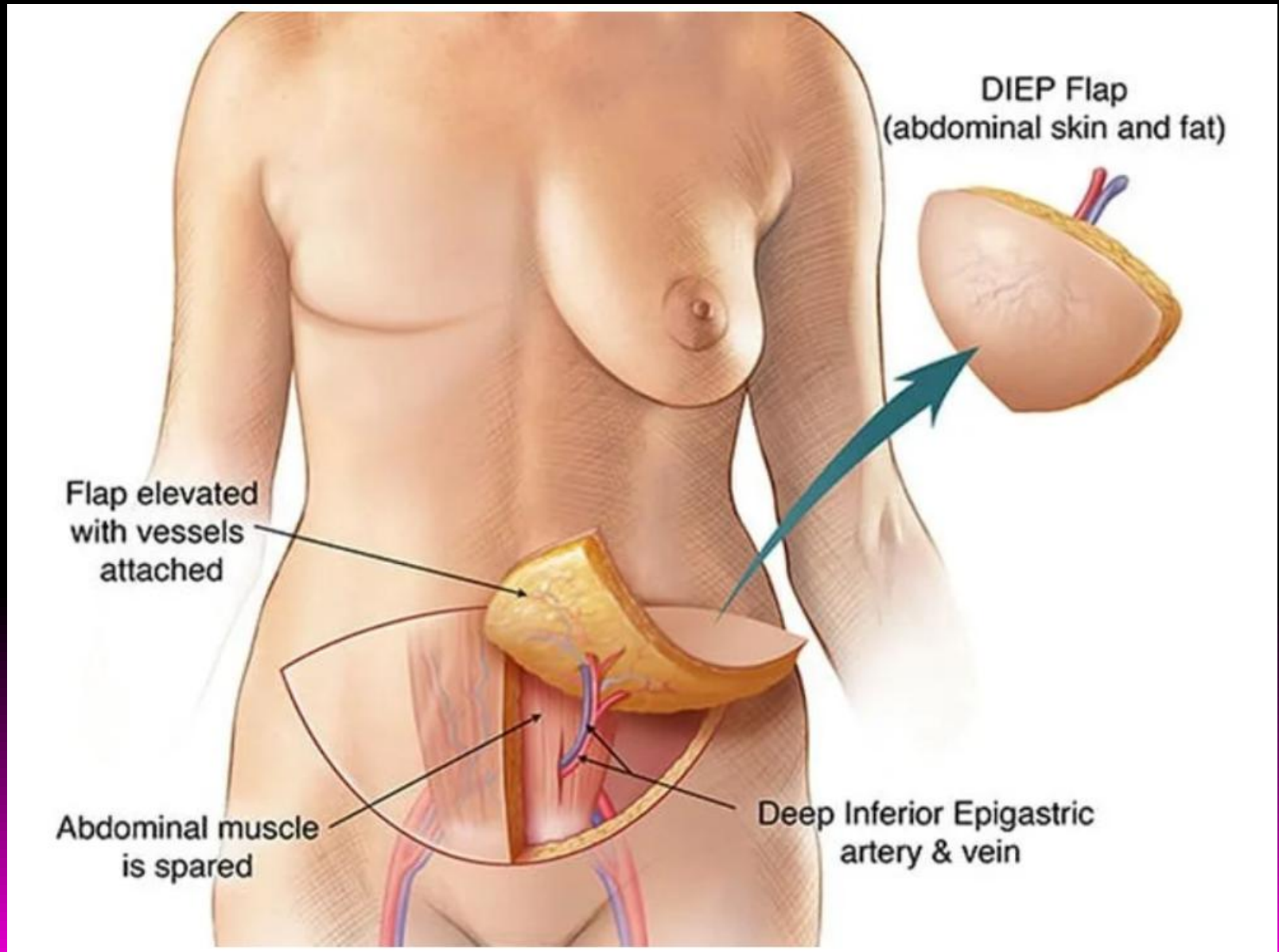
Mastectomy with axillary clearance



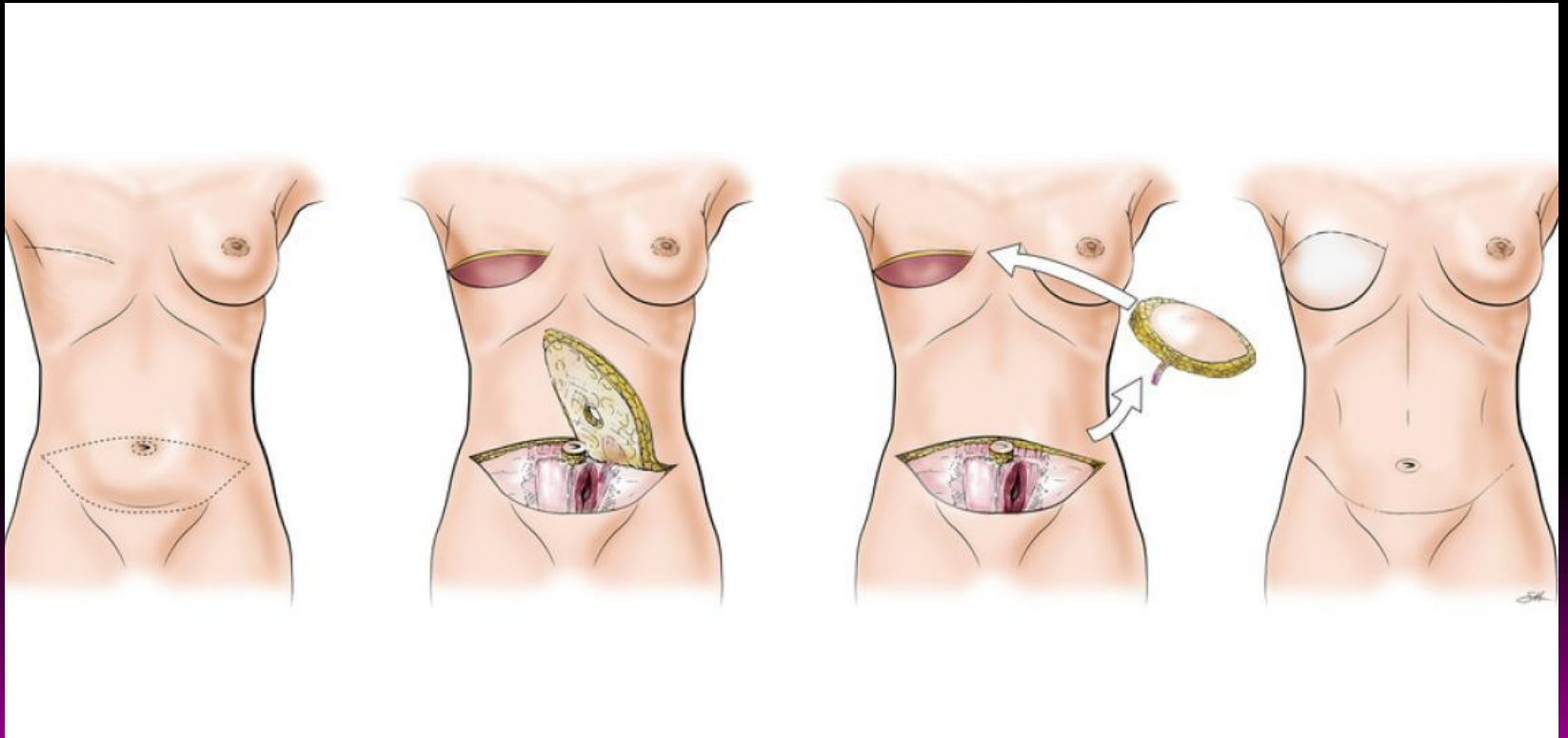
Total mastectomy with axillary clearance



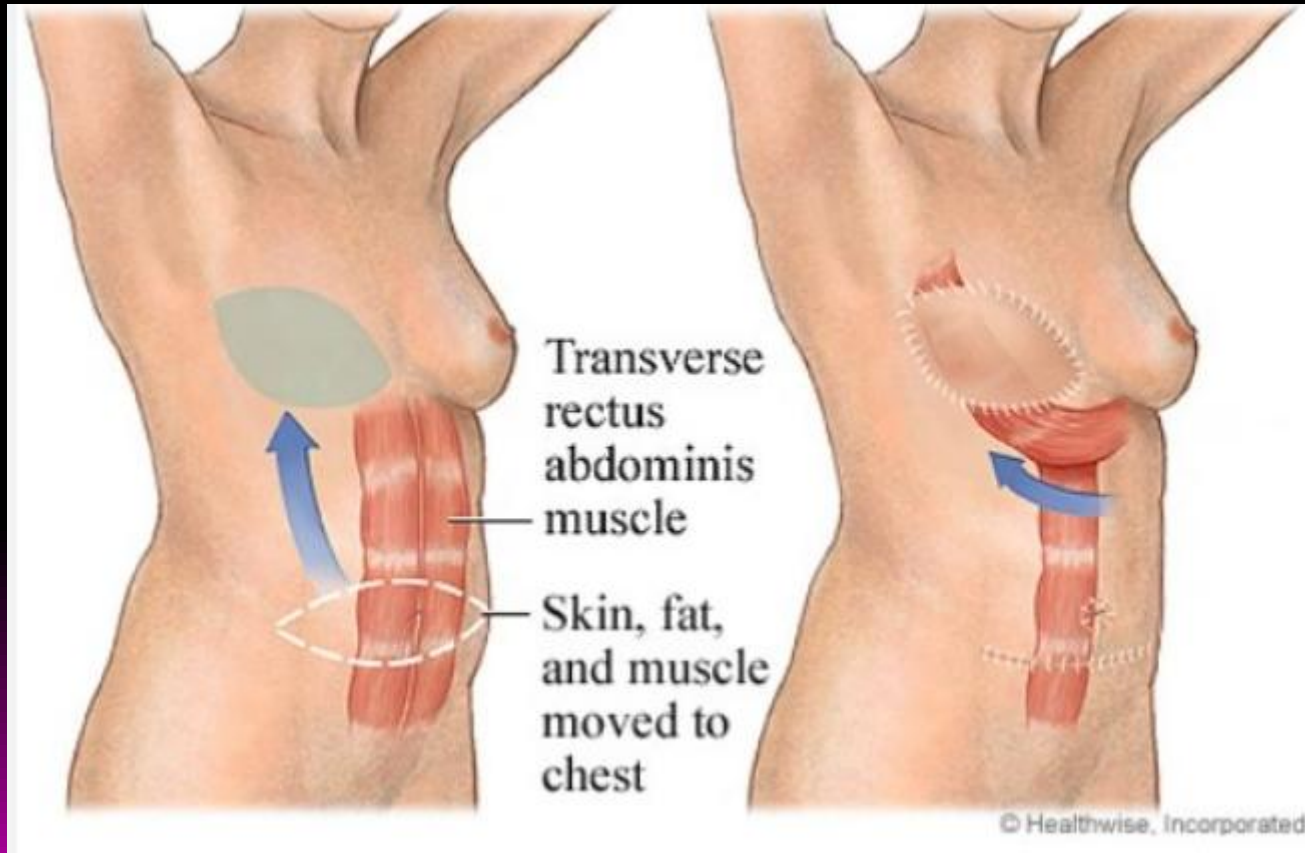
Breast Reconstruction DIEP Flap



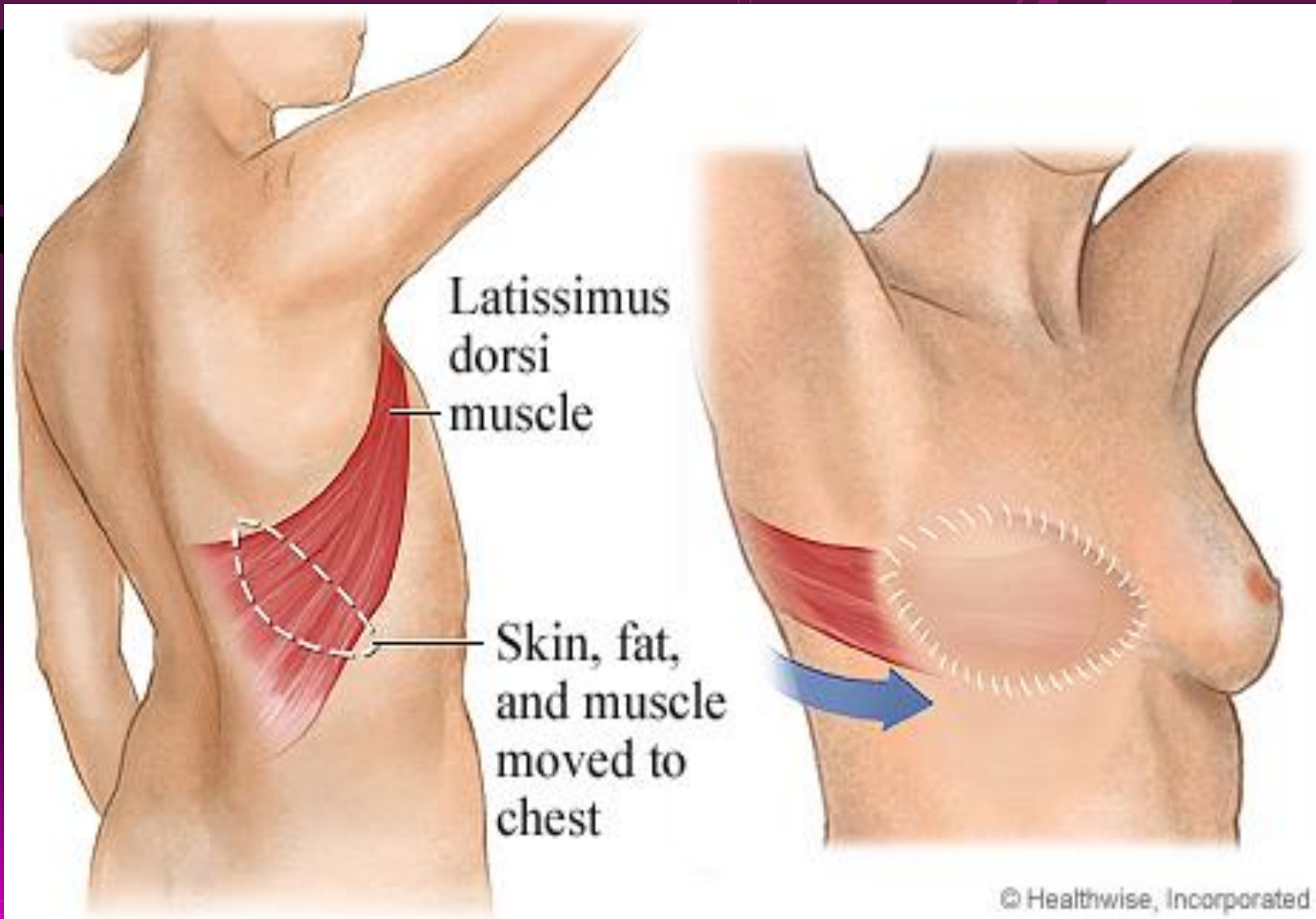
DIEF with microvascular technique



TRAM Flap




Latissimus dorsi Flap

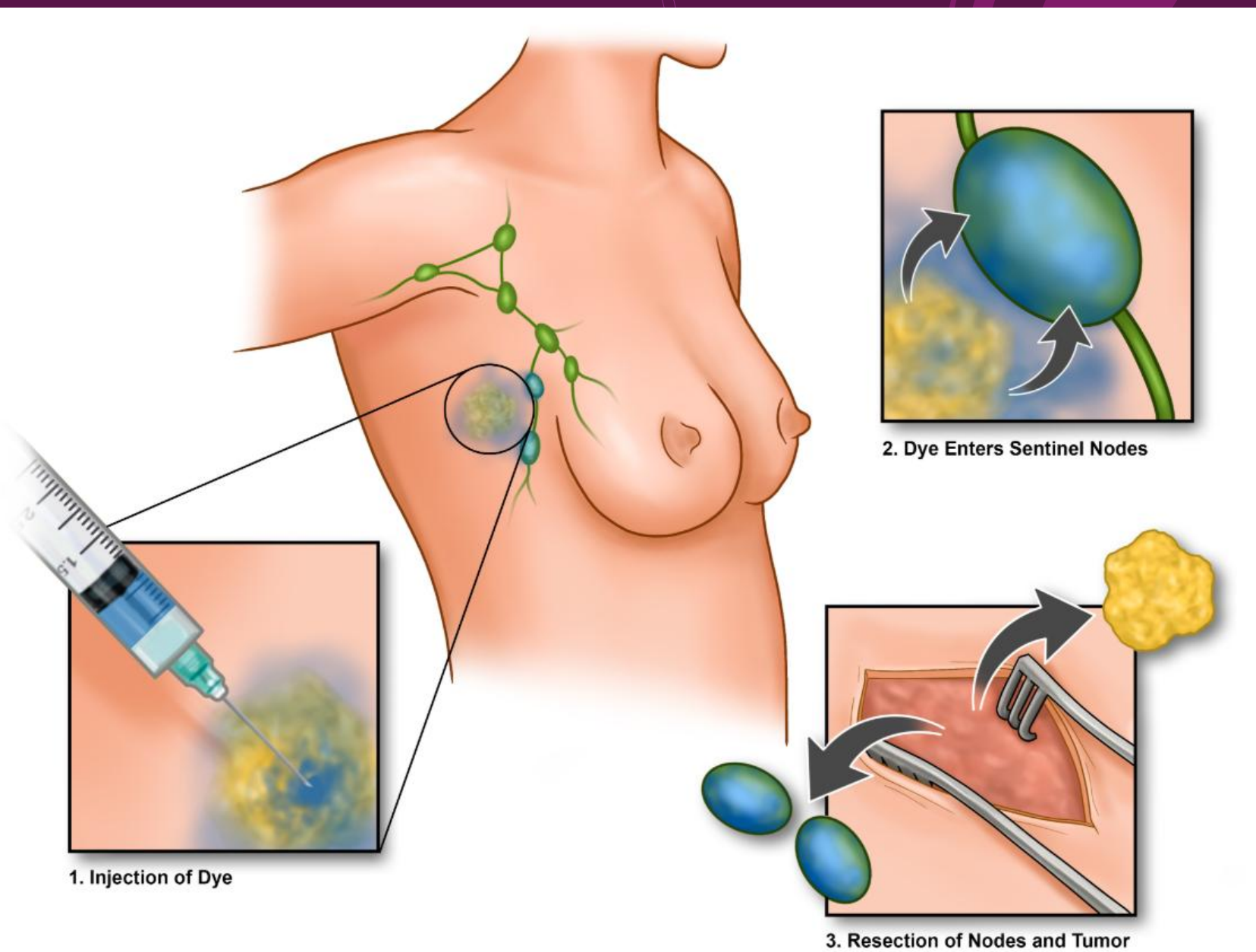




Surgery for the axilla

- Sentinel Lymph Node Biopsy (SLNB)
 - Axillary Lymph Node Dissection (ALND)
 - Endoscopic axillary dissection
 - Gamma Probe
 - Axillary clearance
- 

Sentinel LN biopsy



Axillary Clearance

All Lymph Node , lymphatic vessels,
fats are removed from the axilla



Digital and Technological Advancements

- **3D Imaging, AR, and VR:** These technologies improve the accuracy of surgical planning, reduce false-negative rates, and enhance the overall diagnostic precision, according to a study published in the journal BMC Surgery.
- **Robotic Surgery:** Robotic assistance can enhance precision and minimize incisions during breast cancer surgery.

Tests done on resected specimen

- Histopathology –Types of Breast cancer.
- Presence of metastasis in axillary LN)
- Grading
- Receptor study
 - Estrogen-70% positive
 - Progesterone
 - HER-2 receptor(25-30% positive)



Indication of Hormone therapy

➤ ER positive

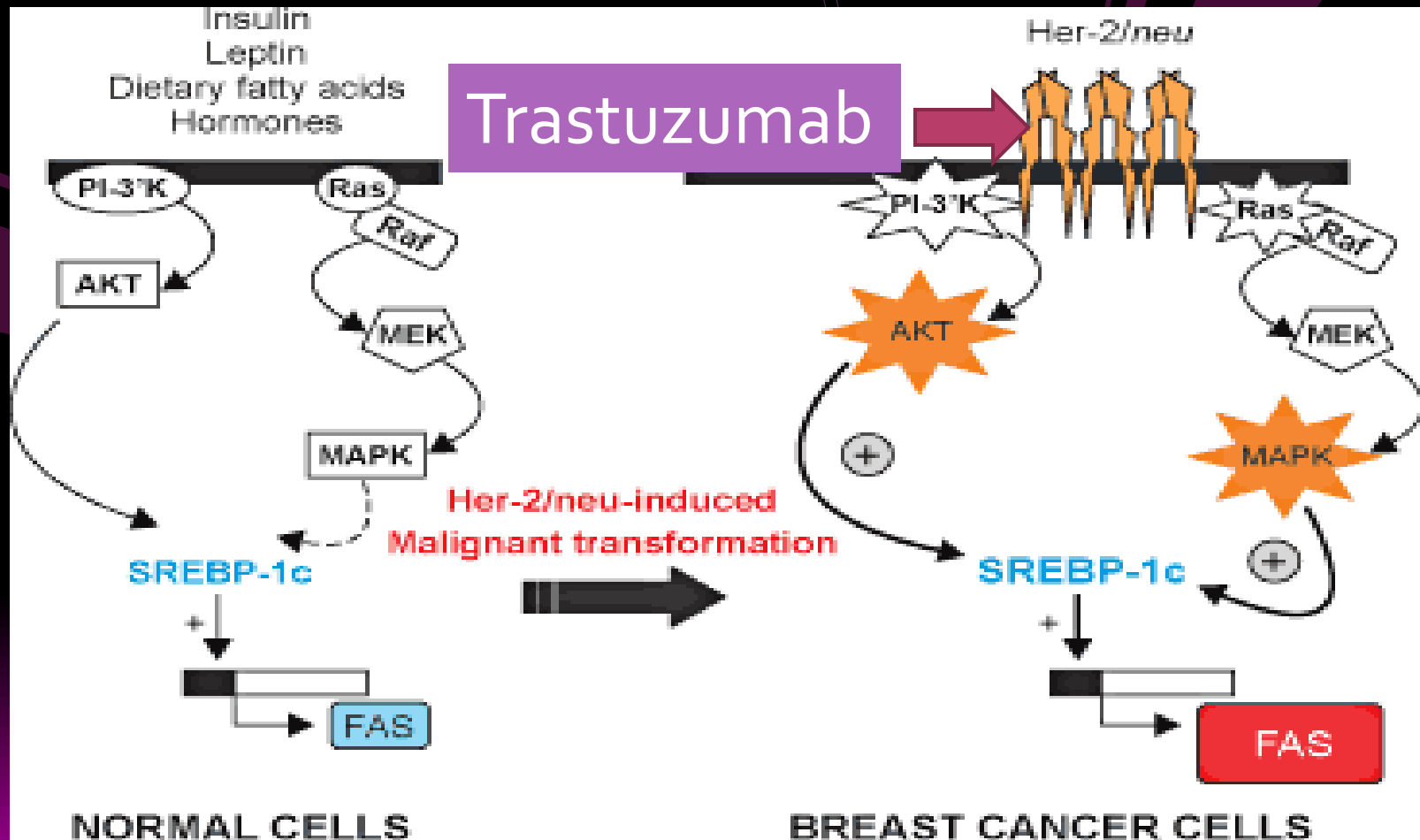
Can be given to both Post menopausal
and Pre menopausal women



Significance of HER-2 positive

- Aggressive cancer
- Her-2 receptor can be blocked by Trastuzumab

Biological Therapy- Trastuzumab and Her-2/neu onco-gene

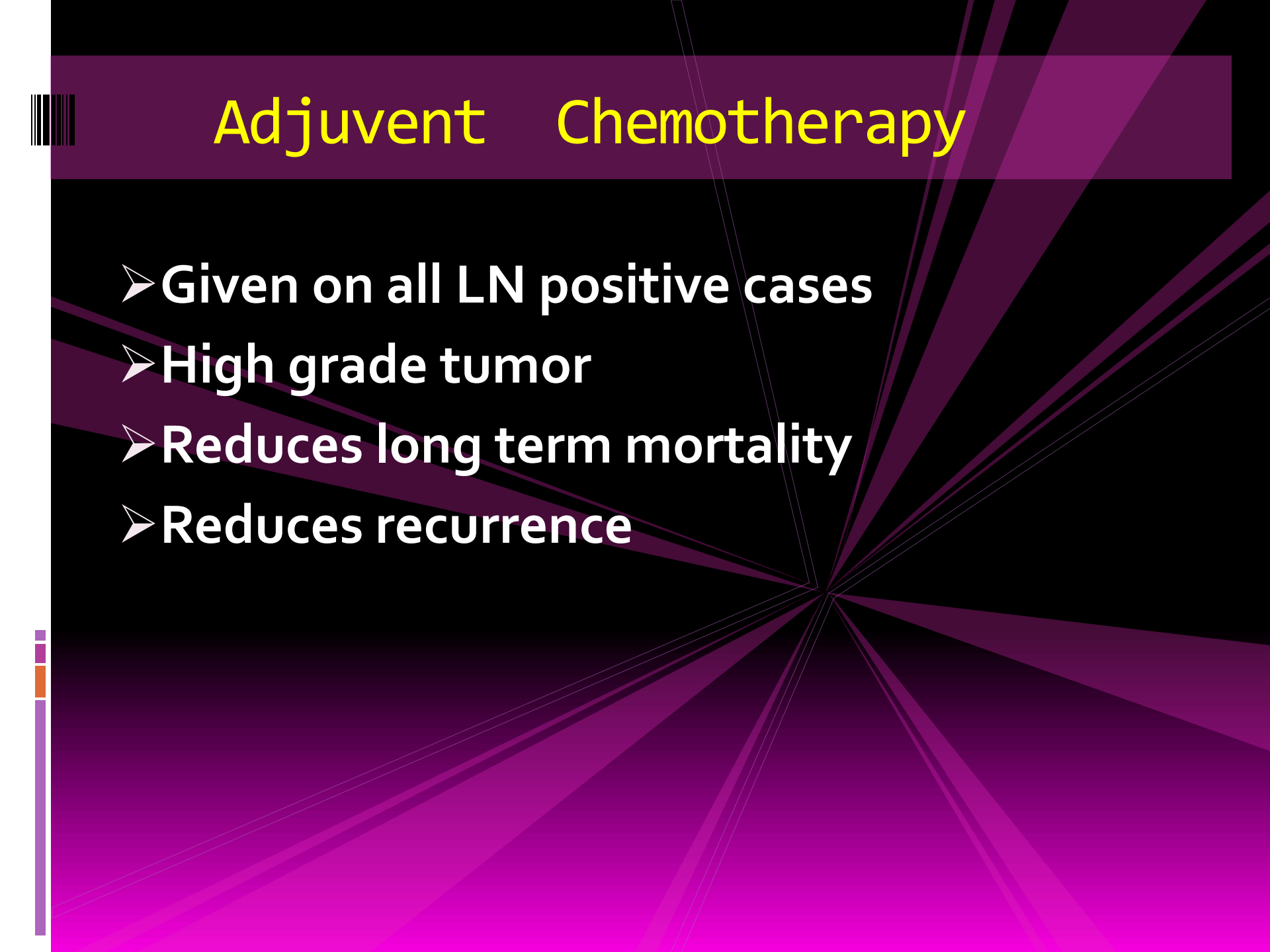





Chemotherapy



Adjuvant Chemotherapy

- **Given on all LN positive cases**
 - **High grade tumor**
 - **Reduces long term mortality**
 - **Reduces recurrence**
- 
- 

Benefit of Adjuvant Chemotherapy

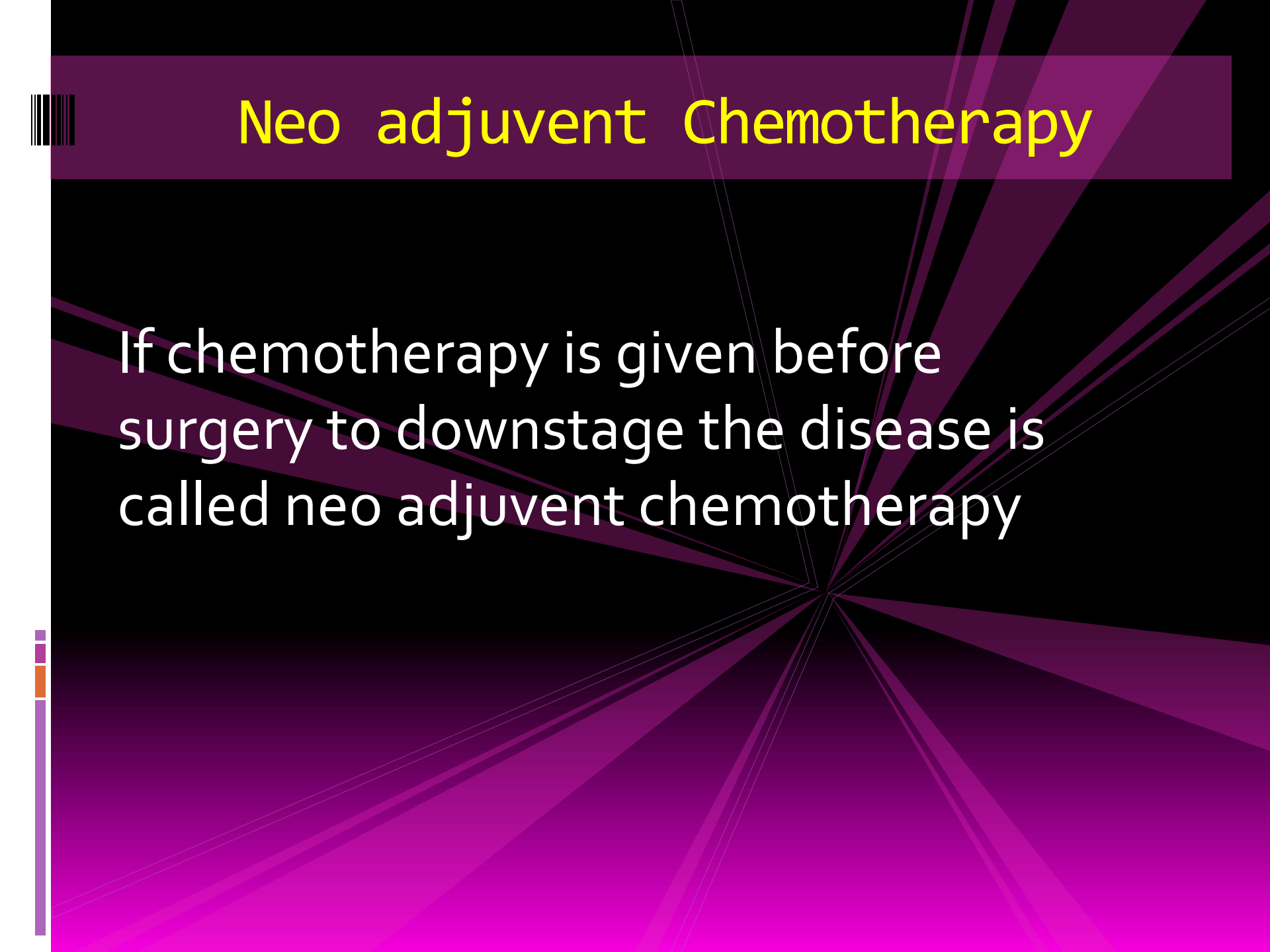
Annual reduction of mortality	Age of patient
38%	<50 years
20%	50-70 years

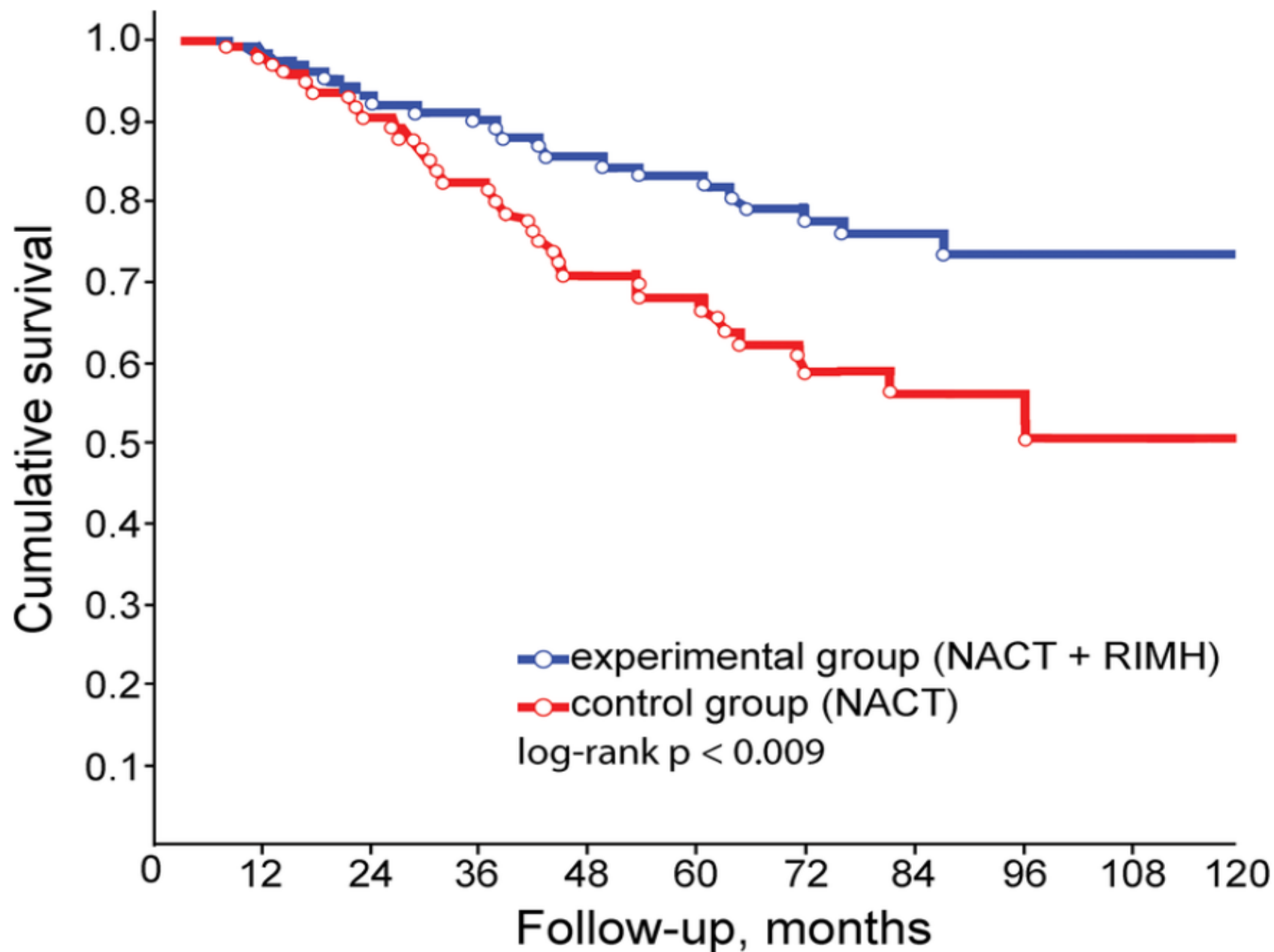
Lancet, V-365, 9472, 2005, p-1687-1717



Neo adjuvent Chemotherapy

If chemotherapy is given before surgery to downstage the disease is called neo adjuvent chemotherapy







Hormone Therapy

Methods of Hormone therapy

- **Selective Estrogen Receptor Modulators (SERMs): Tamoxifen, Raloxifene**
- **Aromatase Inhibitors: Anastrozole, Letrozole, Exemestane**
- **Ovarian Suppression Therapy:**
 - Medications like Goserelin and Leuprolide
 - Surgery to remove the ovaries (oophorectomy)
 - Radiation therapy to the ovaries

Benefit of combined therapy

Predicted benefit of combined
Chemotherapy and Tamoxifen

Disease free survival	Age of Pt
57%	<50
45%	50-69


The Lancet, 365, 9472, 2005, p-1687-1717



Radiotherapy

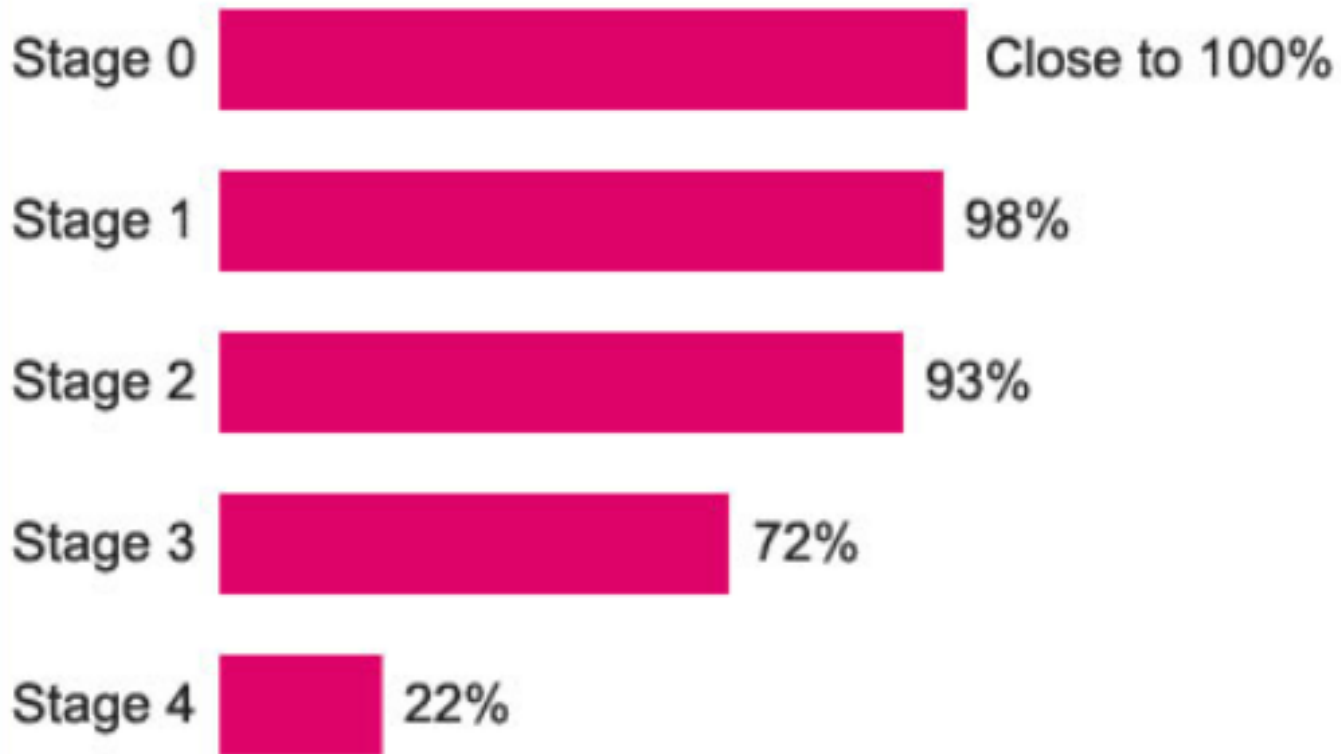


Role of Radiotherapy

- Prevent local recurrence
 - Must be used after breast conserving surgery
 - Has not benefit on mortality reduction.
- 

Prognosis

5-year breast cancer survival rate



Screening for breast Cancer

- **Mammography:**

Mammograms are the most common and effective screening method for breast cancer

- **Who should be screened?**

The United States Preventive Services Task Force recommends screening for all women every other year, starting at age 40 and continuing through age 74.

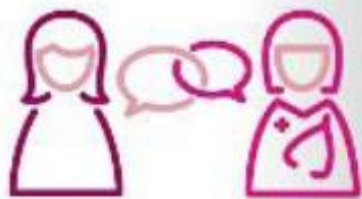
- **Screening frequency:**

NHS Breast Screening Programme invites women aged 50 to 70 for screening every 3 years.



New Breast Cancer Screening Guideline

for women with average risk



AGE 40

Talk with your doctor about when to begin screening. **Women should have the opportunity to begin screening** if they choose.



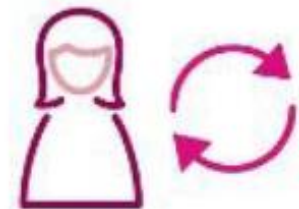
AGE 45

Begin **yearly mammograms** by age 45.



AGE 55

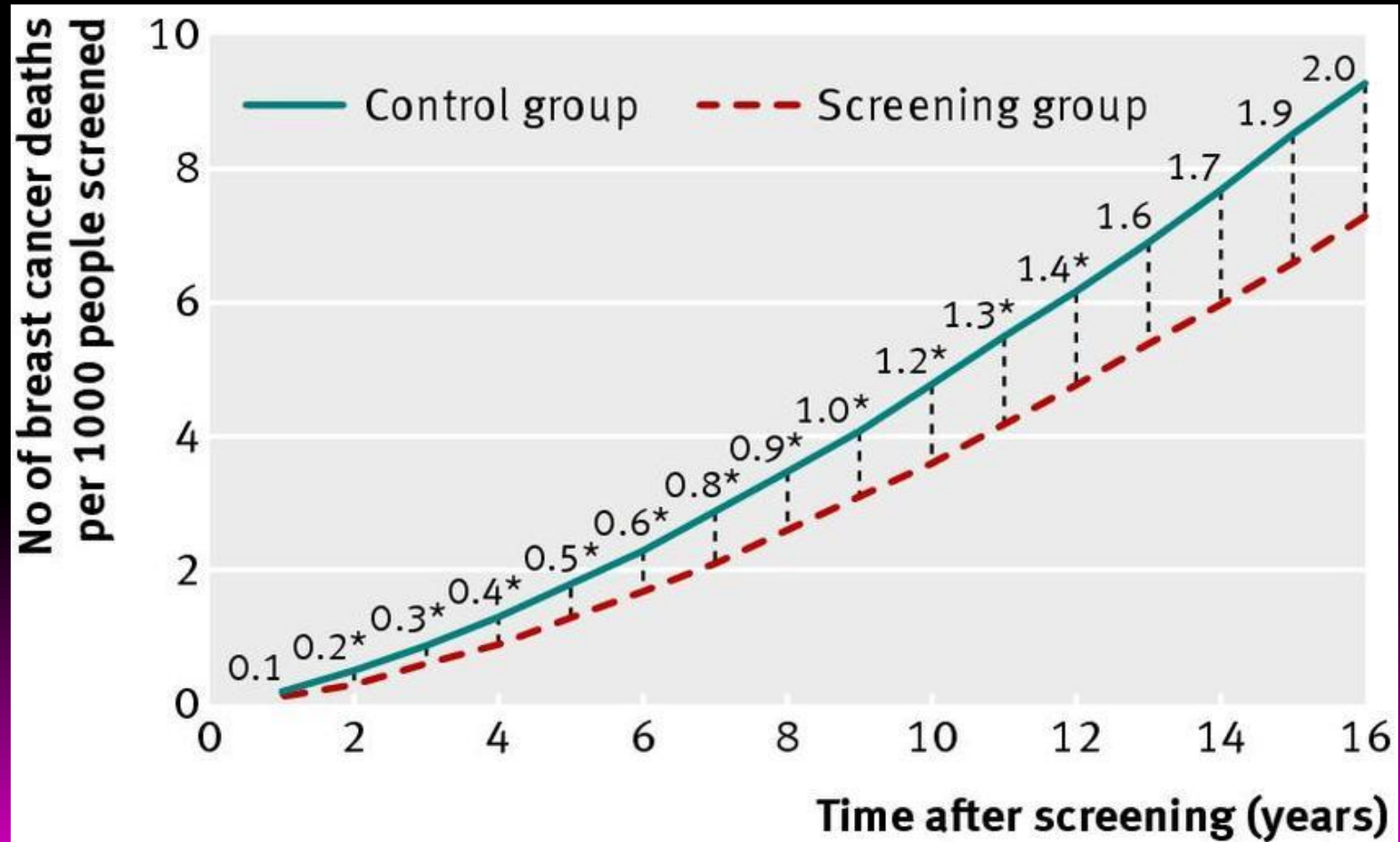
Transition to mammograms **every other year** at age 55 or continue with annual mammography, depending on your preferences.



AGE 55 +

Continue to have regular mammograms for as long as you're in good health.

Reduction of breast cancer mortality by screening



New data shows
breast cancer mortality

**reduced
by 58%**

in the last 40 years



A thick, vibrant pink awareness ribbon is shown in a loop, crossing itself. The ribbon has a slight gradient and a soft shadow, giving it a three-dimensional appearance. It is positioned on the left side of the image, partially overlapping a large pink circle.

**EARLY
DETECTION
SAVES
LIVES**