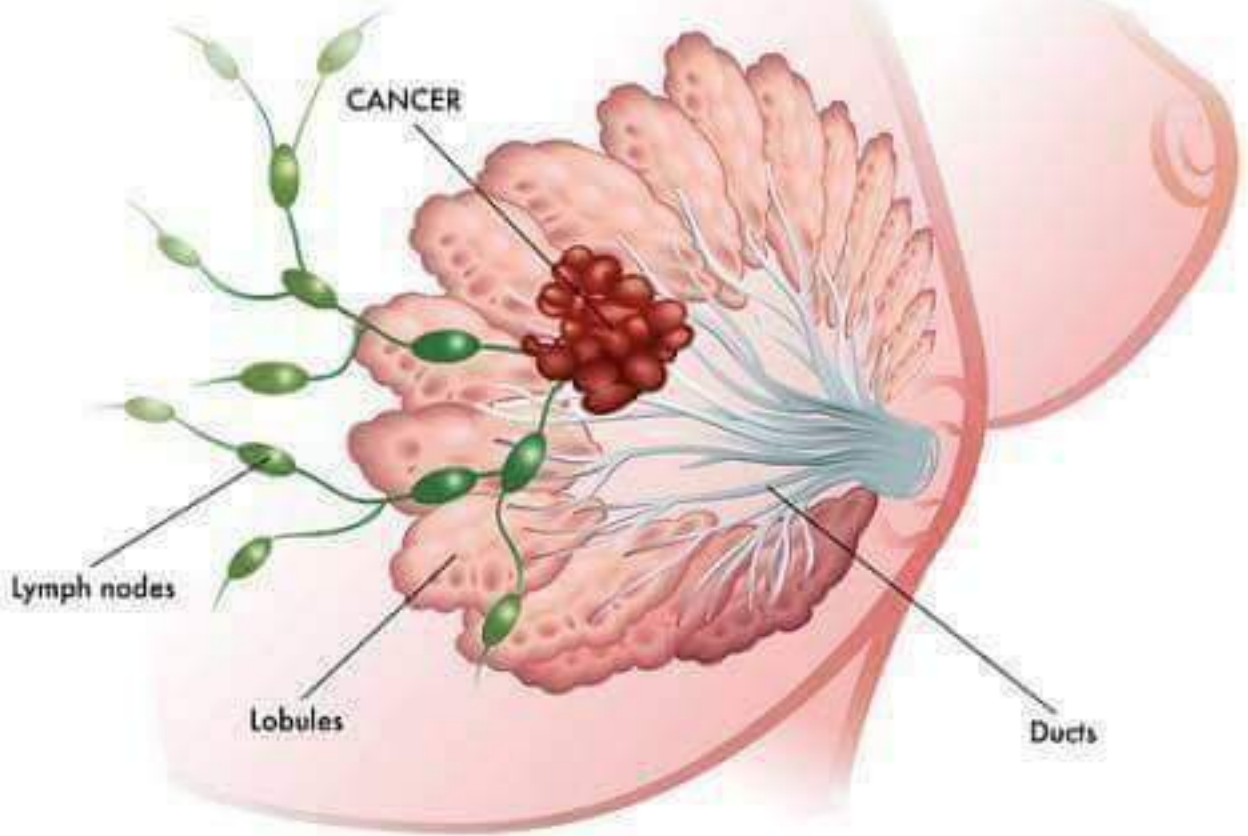
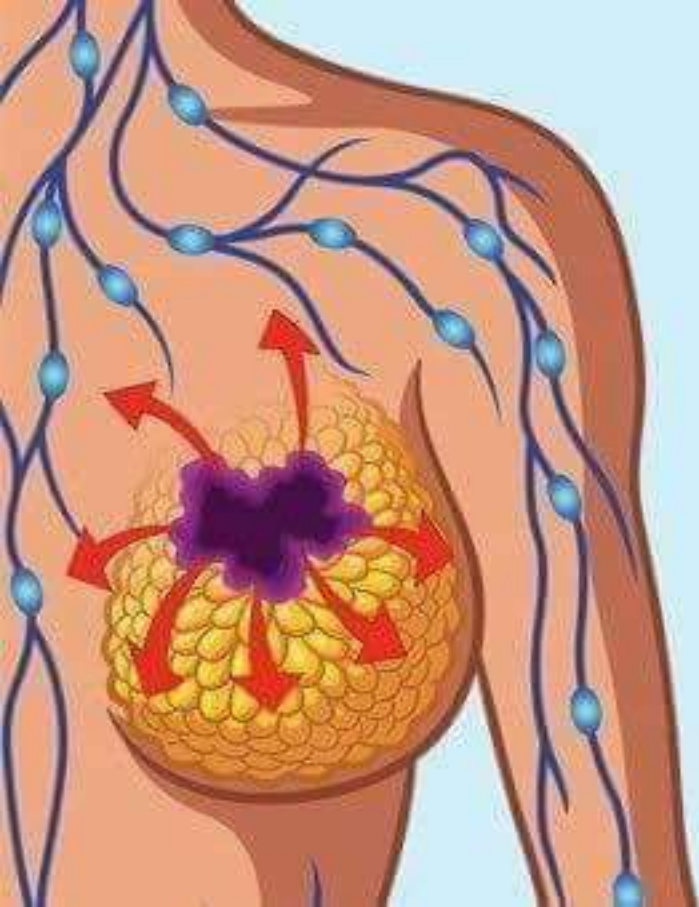
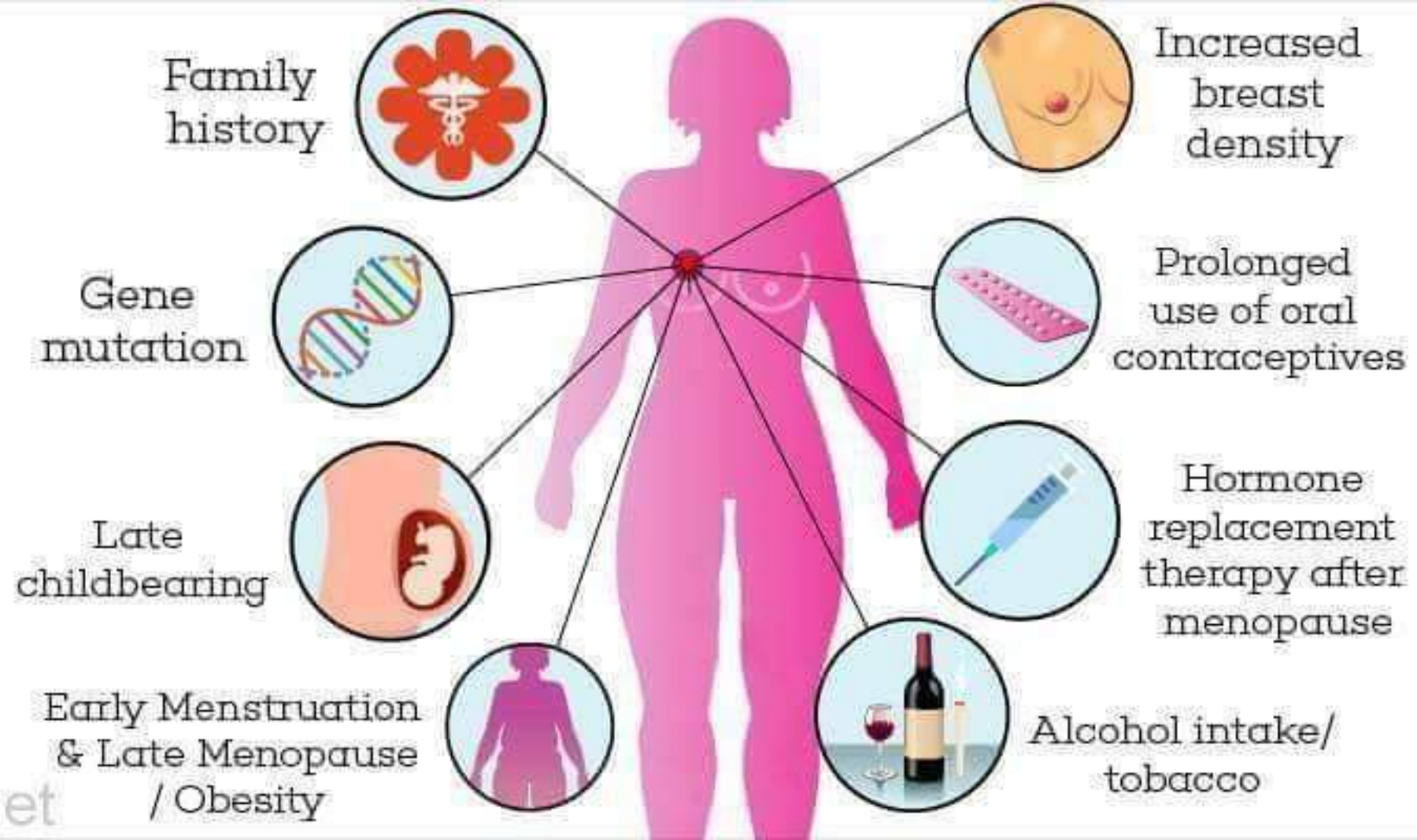


# Breast Cancer





# Causes and Risk Factors of Breast Cancer



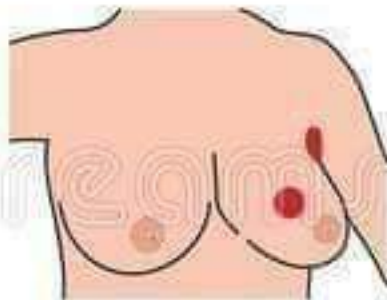
### Stage 1

Early disease: tumour confined to the breast (node-negative)



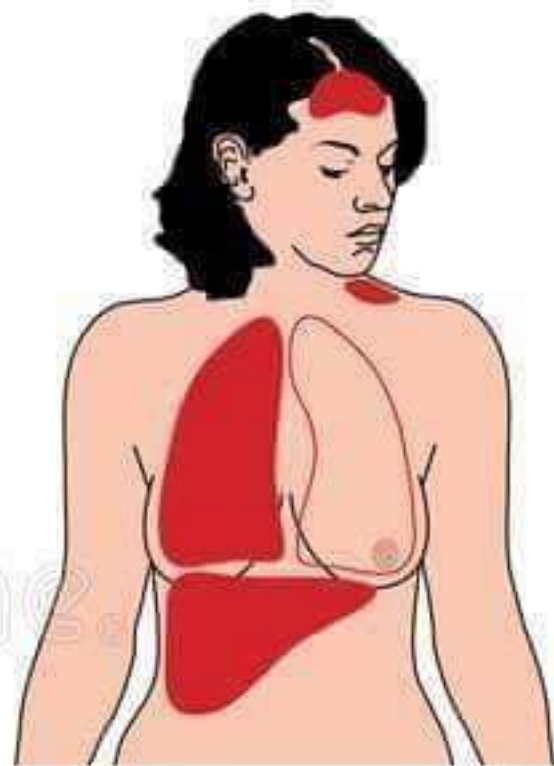
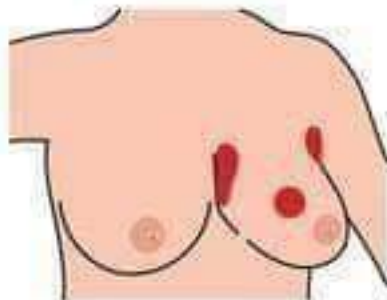
### Stage 2

Early disease: tumour spread to movable ipsilateral axillary node(s) (node-positive)



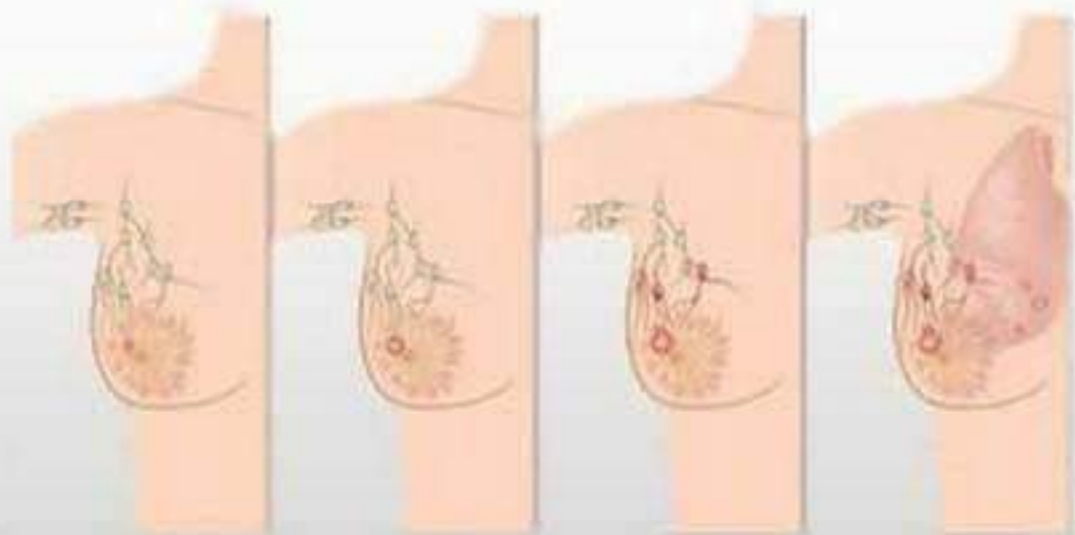
### Stage 3

Locally advanced disease: tumour spread to the superficial structures of the chest wall; involvement of ipsilateral internal mammary lymph nodes



### Stage 4

Advanced (or metastatic) disease; metastases present at distant sites, such as bone, liver, lungs and brain and including supraclavicular lymph node involvement



**Stage I**

**Stage II**

**Stage III**

**Stage IV**

# Do You Know the Warning Signs of BREAST CANCER?



Lump in the Breast or Armpit

#01



Red or Swollen Breasts

#02



Nipple Discharge

#03



Pain in the Breast or Chest Area

#04



Changes in Breast Appearance

#05



Nipples Become Sensitive

#06



Itching on the Breasts

#07



BREAST  
CANCER  
SIGNS

# Diagnosis



## STAGE OF BREAST CANCER

Doctors classify breast cancer according to stages. Tests determine the size of the tumor and areas it has spread.

### Stage 0 (Least Advanced Stage)

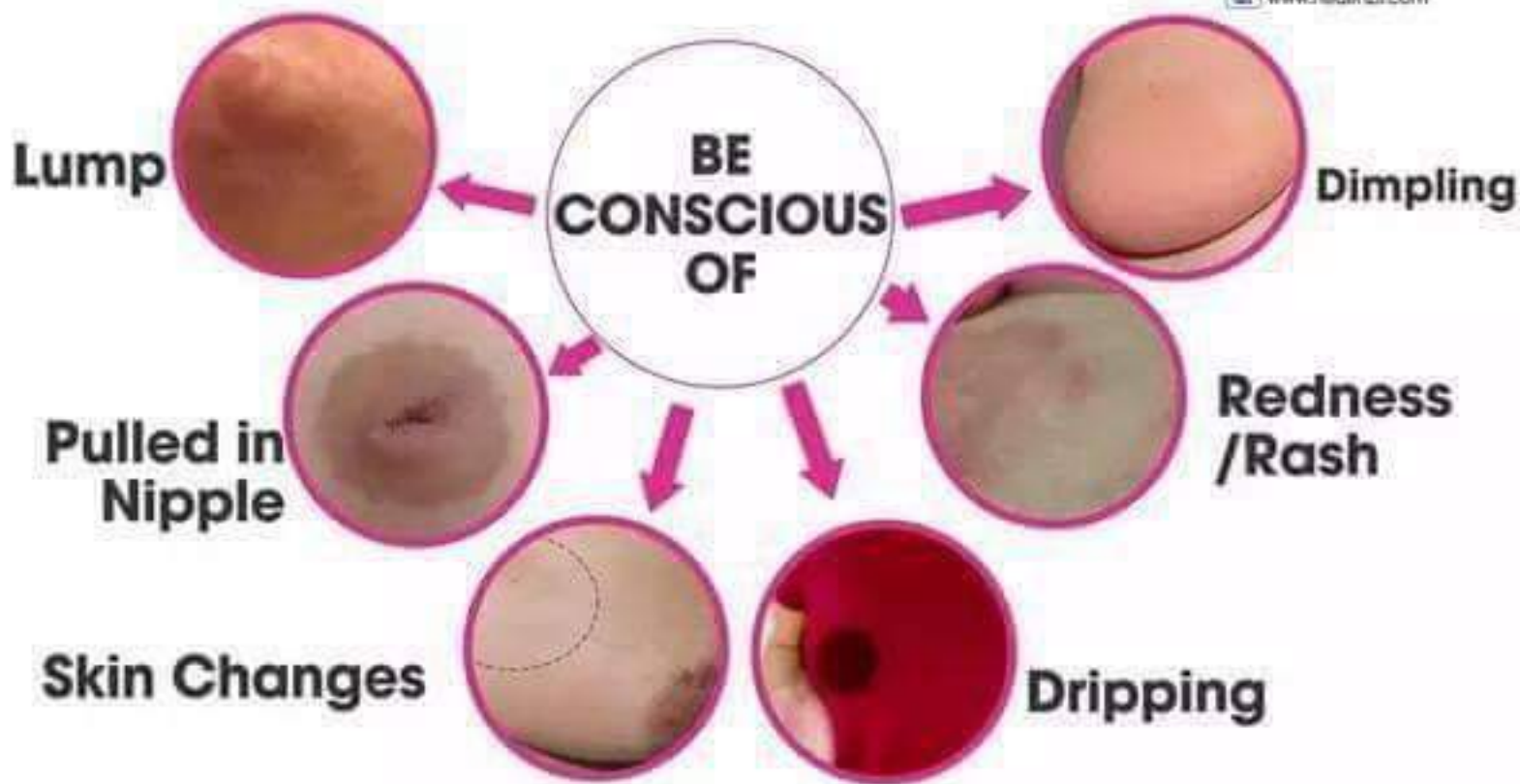
Cancer cells are within a duct and have not invaded into the surrounding fatty breast tissue.

### Stage I, II, and III

The cancer is distinguished by the size of the tumor and whether it has spread to the chest wall or skin or to lymph nodes near the breast.

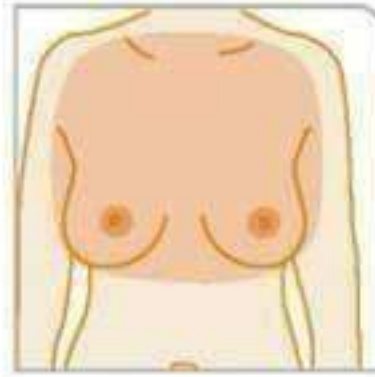
### Stage IV (Most Advanced Stage)

The cancer has spread (metastasized) to other organs or to lymph nodes far from the breast.





# How do I CHECK my breasts?



Check all parts of your breast, your armpits and up to your collarbone for **changes**.

breast  
cancer  
care



A change in **size** or **shape**



**Redness** or a **rash** on the skin and/or around the nipple



**Discharge** (liquid) that comes from the nipple without squeezing



A **swelling** in your armpit or around your collarbone



A **lump** or **thickening** that feels different from the rest of the breast tissue



A change in **skin texture** such as puckering or dimpling (like orange skin)

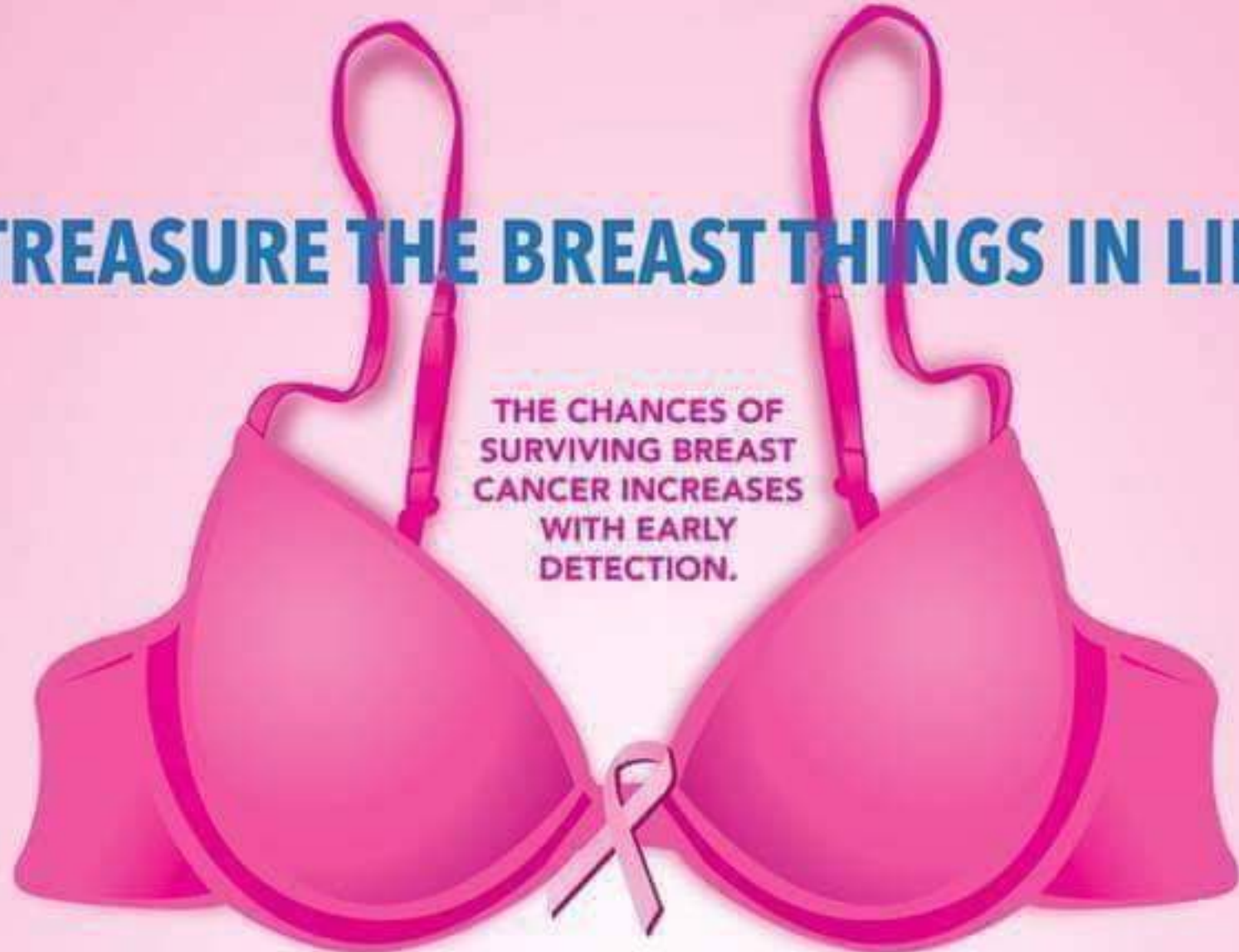


Your nipple becoming **inverted** (pulled in) or changing its position or shape



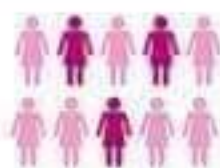
Constant **pain** in your breast or your armpit

# TREASURE THE BREAST THINGS IN LIFE



THE CHANCES OF SURVIVING BREAST CANCER INCREASES WITH EARLY DETECTION.

Breast Cancer is **THE MOST COMMON CANCER** among women in Singapore.<sup>1</sup>



Breast cancer accounts for **3 in 10** cancer cases in females.<sup>2</sup>

**AVERAGE NO. OF BREAST CANCER CASES PER YEAR (2010-2014):**

**1,850**

women are newly diagnosed with breast cancer

**400**

die from the disease.<sup>3</sup>

**SCREENING TRENDS**



**2 IN 5**

women aged 50-69 years have gone for mammogram screening within the last two years<sup>4</sup>

## SO DON'T DELAY ANY LONGER

### Take charge of your health and book your mammogram now!

#### SCREENING TEST AND FREQUENCY



Women who are **50 to 69 years<sup>5</sup>** are recommended to go for a screening **mammogram** once every two years.



#### POST SCREENING

Follow up with a medical healthcare professional who can help:



- Explain the screening results to you
- Determine the appropriate follow-up based on your results
- Explain the costs (if any) and other claims you are entitled to, such as Medisave and Medishield Life.

<sup>1</sup> Singapore Cancer Registry, Annual Registry Report, Trends in Cancer Incidence in Singapore 2010-2014

<sup>2</sup> Singapore Cancer Registry, Annual Registry Report, Trends in Cancer Incidence in Singapore 2010-2014

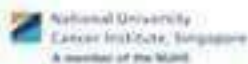
<sup>3</sup> Singapore Cancer Registry, Annual Registry Report, Trends in Cancer Incidence in Singapore 2010-2014

<sup>4</sup> Health Behaviour Surveillance of Singapore (HBSS) 2015

<sup>5</sup> Women aged 40 to 49 years old are advised to talk to their doctor about the benefits and limitations of mammograms in this age group so that they can make an informed choice about going for screening.

If you decide to get screened, you should go for a screening mammogram once a year until you are 50.

A Public Education Initiative By:



Supported By:



# 5 STANDARD

*treatment options:*



SURGERY



RADIATION



HORMONE  
THERAPY



CHEMO-  
THERAPY



TARGETED  
THERAPY

**LOCAL**

**SYSTEMIC**

# YOUR BREAST CANCER CARE PATH

Houston Methodist's experts and staff build personal relationships with our patients and their families to ensure everyone receives the most advanced care in an atmosphere filled with collaboration, research and compassion.

We have the latest technology to quickly and accurately diagnose breast cancer.

We perform the most progressive surgical and reconstruction techniques.

We support you through recovery and beyond to allow you to live your fullest life.



We consider the best treatment options and develop a care plan just for you.

We advance immunotherapy research and offer the most effective options to preserve healthy tissue and cells.

## Newly Diagnosed HER2-Positive Breast Cancer

Tumor 0.5–2.0 cm, clinically node-negative



**Surgery**

Node-negative



•PH × 12 wks (preferred)  
or  
•AC → PH  
or  
•TCH



H to complete 1 yr

Node-positive



•AC → PH (preferred)  
or  
•TCH (if cardiac risk factors, other contraindications to anthracycline)



H to complete 1 yr

Tumor > 2.0 cm, clinically node-positive, locally advanced, inflammatory



**Neoadjuvant chemotherapy**

**Dual anti-HER2 regimens:** Consider in patients with hormone receptor–negative disease and in patients with symptomatic local disease.

•T + H + pertuzumab → FEC (preferred)

or

•TCH + pertuzumab (if cardiac risk factors, other contraindications to anthracycline)

or

•P + H + pertuzumab → FEC

or

•P + H + pertuzumab → AC

or

T + H + pertuzumab → AC

**Single anti-HER2 regimens**

•AC → PH

or

•TCH



**Surgery**



H to complete 1 yr

**Figure: Treatment Algorithm for Stage I-III HER2-Positive Breast Cancer**—AC = doxorubicin, cyclophosphamide; FEC = fluorouracil, epirubicin, cyclophosphamide; H = trastuzumab; P = paclitaxel; T = docetaxel; TCH = docetaxel, carboplatin, trastuzumab.

## Treatment category

### **Surgery**

Surgeon

### **Radiation therapy**

Radiation Oncologist

### **Systematic therapy**

Medical Oncologist

(attack cancer cells throughout the body)

## Specific treatments

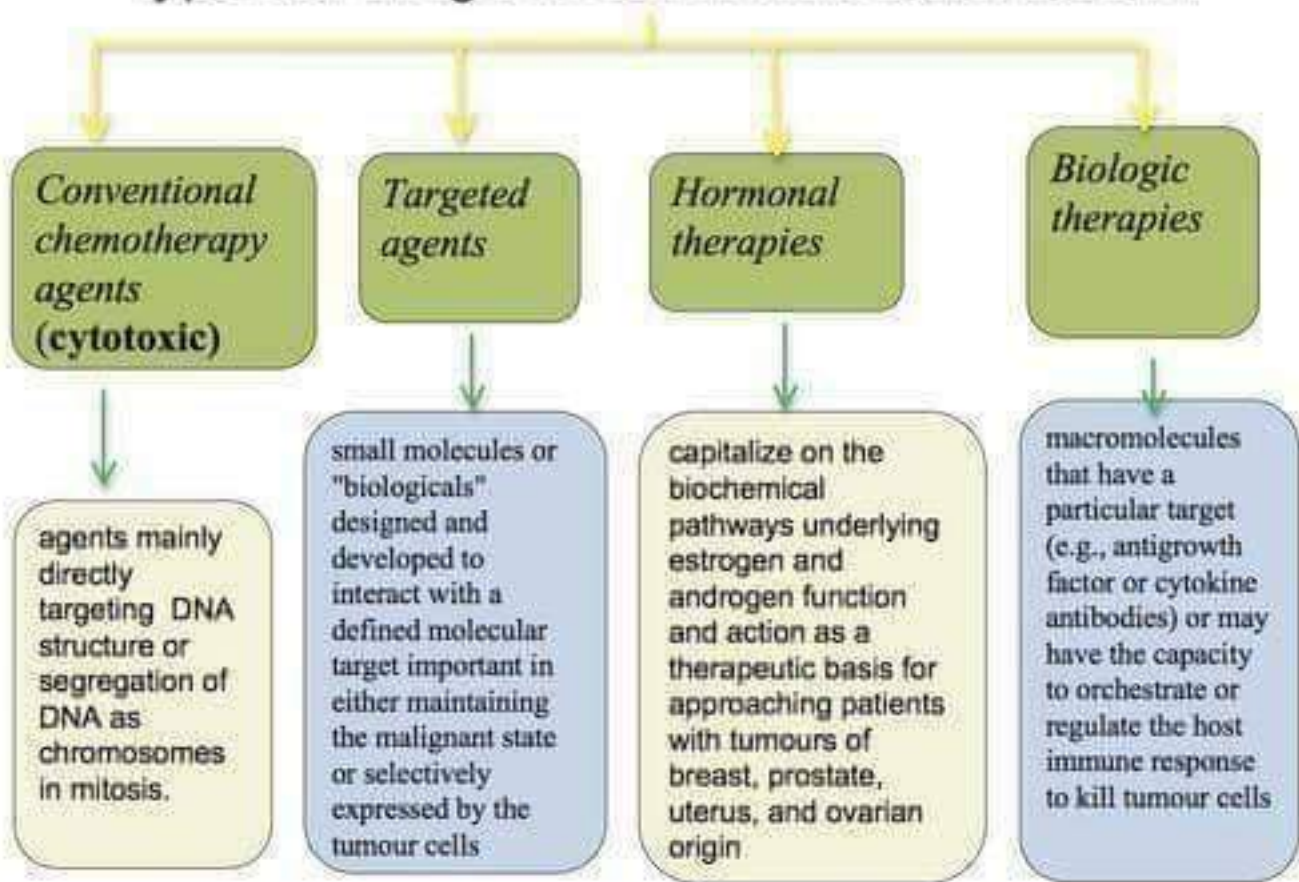
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- Lumpectomy
- Lymph node dissection (seminal and axillary)
- Mastectomy
- External beam (3D conformal, IMRT)
- Brachytherapy (High dose [HDR] or low dose [LDR])
- Intraoperative radiation (IORT)
- Chemotherapy
- Hormone therapy
- Targeted drug therapy

Table 3: Assessing for Cardiotoxicities Related to Breast Cancer Treatment

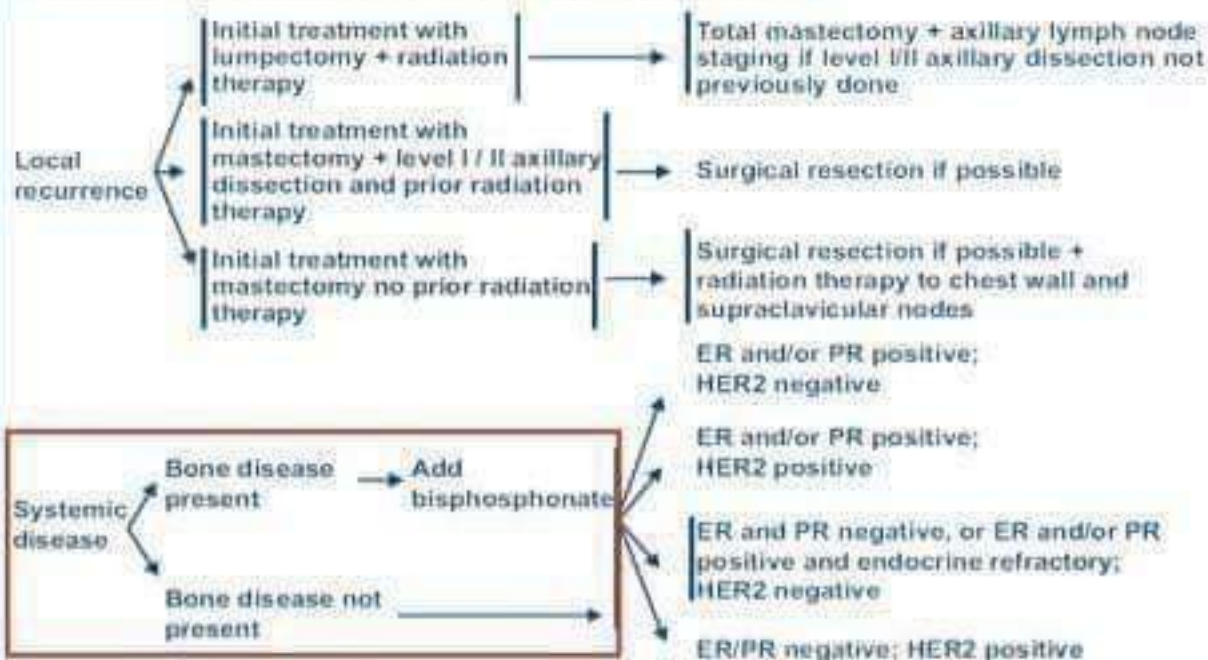
Pre-Treatment Phase	Treatment Phase	Post-Treatment Phase
<b>Identify Risk Factors</b> <ul style="list-style-type: none"> <li>• Obesity</li> <li>• Hypertension</li> <li>• Older age</li> <li>• Prior exposure to cardiotoxic agents (particularly anthracycline) or radiation to chest</li> <li>• Previous cardiac disease</li> </ul>	<b>Assess for Symptoms of Heart Failure</b> <ul style="list-style-type: none"> <li>• Fatigue</li> <li>• Dyspnea</li> <li>• Orthopnoea</li> <li>• Paroxysmal nocturnal dyspnea</li> </ul>	<b>Ongoing Awareness</b> of past exposure to cardiotoxic chemotherapy and radiation to the chest
<b>Initiate Baseline Studies</b> <ul style="list-style-type: none"> <li>• MUGA/ECHO</li> <li>• Cholesterol screening</li> </ul>	<b>Examine for Physical Signs of Heart Failure</b> <ul style="list-style-type: none"> <li>• Weight gain</li> <li>• Edema</li> <li>• S3 or S4 heart sounds</li> <li>• Venous jugular distension</li> <li>• Hepatojugular reflux</li> <li>• Ascites</li> <li>• Changes in vital signs</li> <li>• Abnormal lab results</li> <li>• Abnormal lung sounds</li> </ul>	<b>Cardiovascular Assessment</b> <ul style="list-style-type: none"> <li>• Identify early signs and symptoms of heart failure</li> </ul>
<b>Serum Markers</b> <ul style="list-style-type: none"> <li>• Consideration of BNP or other relevant serum markers</li> </ul>	<b>Repeat Baseline Studies</b> As signs and symptoms warrant or every 12 weeks if on adjuvant trastuzumab. Asymptomatic patients with values that fall to the lower limit of normal: Hold trastuzumab; consider restarting if values improve.	<b>Cardiac Studies</b> <ul style="list-style-type: none"> <li>• Repeat MUGA/ECHO as clinically indicated</li> </ul>
<b>Lifestyle Modifications</b> <ul style="list-style-type: none"> <li>• Weight loss</li> <li>• Smoking cessation</li> <li>• Alcohol counseling</li> </ul>	<b>Lifestyle Modifications</b>	<b>Lifestyle Modifications</b>

# Types of drugs used in cancer treatment





## SYSTEMIC TREATMENT OF RECURRENT OR STAGE IV DISEASE



cTNM	Neo-adjuv	Sentinel Node	BCT	Mastectomy
<b>DCIS</b>	<b>No</b>	When possible invasive component > 4cm < 55 years Solid component on mammogram DCIS grade II and III	Excision possible with good cosmetic result Unifocal lesion Multifocal within 5 cm DCIS < 4 cm	Good cosmetic result not possible Multicentric DCIS > 4 cm
<b>Localized Cancer</b> Tumor < 5 cm <i>and</i> < 4 axill nodes	<b>Sometimes</b> to make a BCT possible in large tumors	<b>Always</b> unless US-guided fine needle aspiration is positive	Excision possible with good cosmetic result Unifocal lesion Multifocal within 5 cm Invasive Ca < 5 cm	Good cosmetic result not possible with BCT Multicentric Invasive Ca > 5 cm
<b>Loco- regionally Advanced</b> Tumor > 5 cm <i>or</i> > 4 axill nodes	<b>Yes</b>  to make surgery possible	<b>No</b>  unreliable	Usually mastectomy is performed. Sometimes BCT is possible.	