



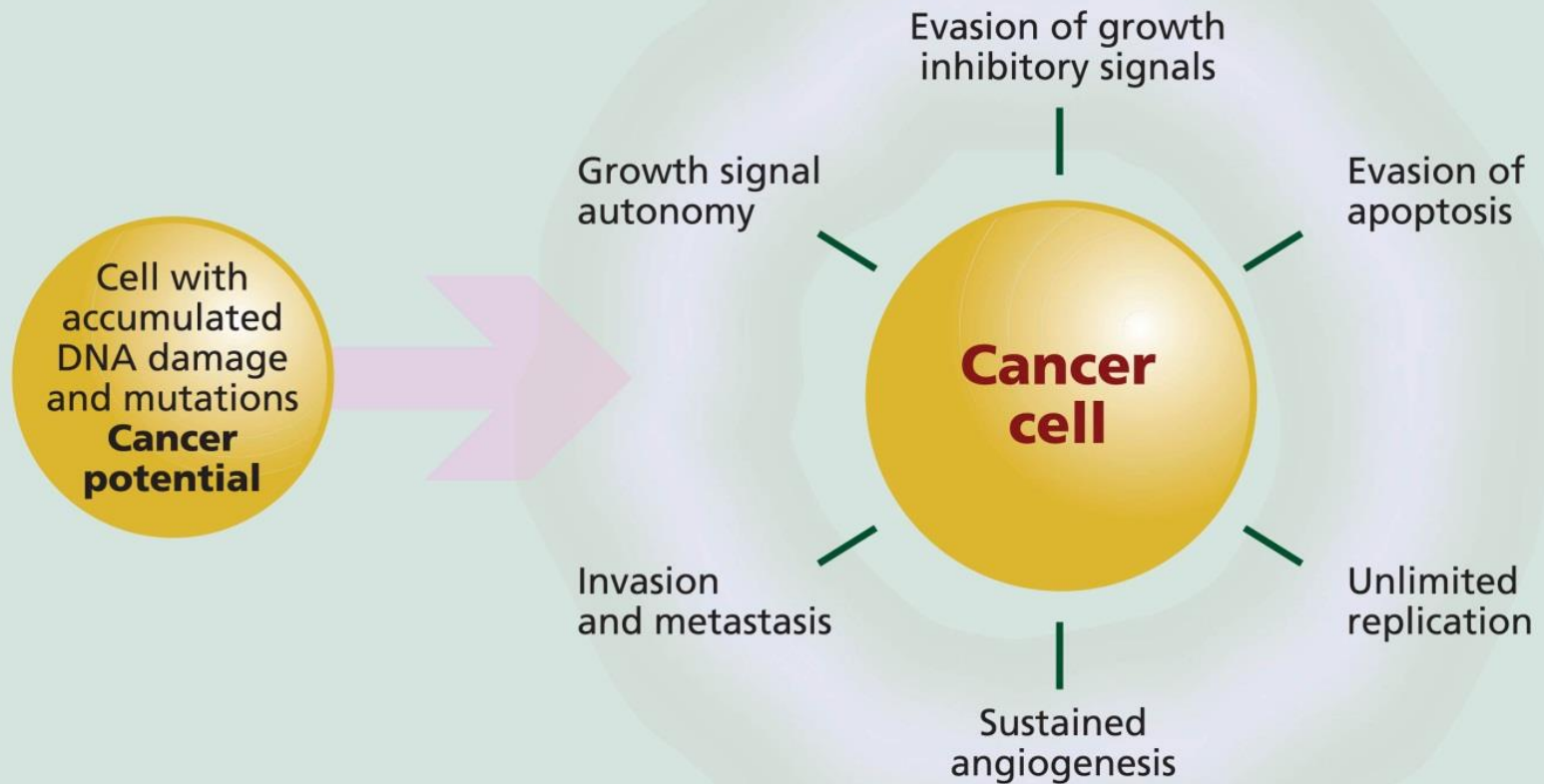
# BREAST CANCER

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# What is Cancer?

- ▣ Cancer is characterized by the uncontrolled growth and spread of abnormal cells. If the spread remains unchecked, it may lead to death
- ▣ It may spread to other parts of the body

## The six hallmarks of cancer



Adapted from Hanahan and Weinberg<sup>111</sup>

# What are Risk Factors?

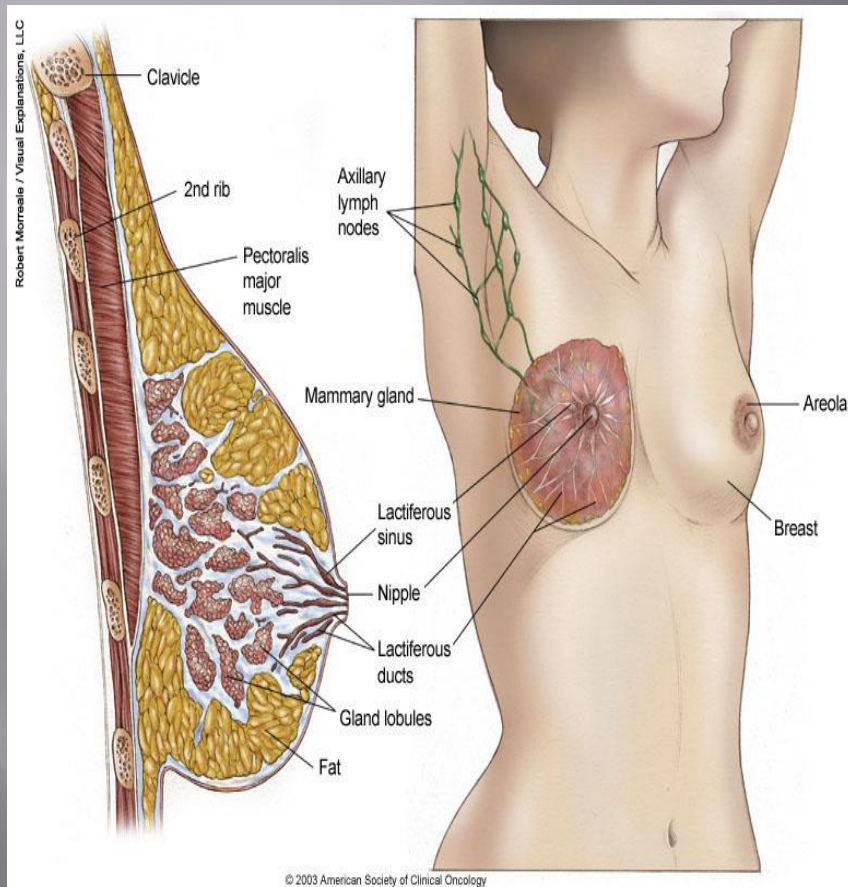
Risk factors are lifestyle or personal traits that increase the risk of developing disease

Decreasing the risk factors decreases the chance of disease acquisition

# Breast Cancer

- ▣ The most common type of cancer in women in Pakistan and the first most frequent cause of death in women
- ▣ A disease in which normal cells in the breast begin to change, grow without control and no longer die
- ▣ Cancer that does not spread is called in situ, meaning “in place”
- ▣ Cancer that spreads is called invasive or infiltrating

# Normal Breast



- ▣ The breast is composed mainly of fatty tissue, contains a system of lobes made up of tiny, tube-like structures called lobules that contain milk glands
- ▣ Tiny ducts connect the glands, lobules, and lobes, and carry the milk from the lobes to the nipple
- ▣ Blood and lymph vessels run throughout the breast
- ▣ About 90% of all breast cancers originate in the ducts or lobes of the breast

# STAGES OF BREAST CANCER



# Stage 0 Breast Cancer

- ▣ Known as “cancer *in situ*,” meaning the cancer has not spread past the ducts or lobules of the breast (the natural boundaries) and also called noninvasive cancer
- ▣ Ductal carcinoma *in situ* (DCIS) is the most common *in situ* breast cancer

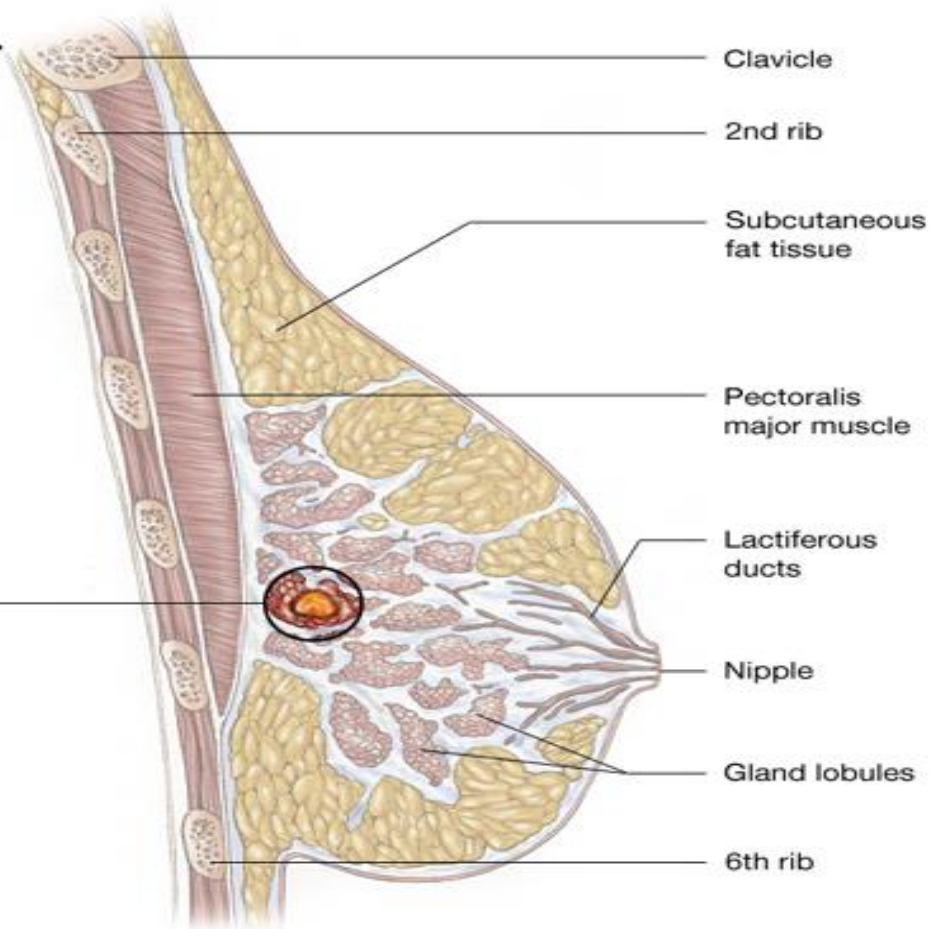


# Stage I Breast Cancer

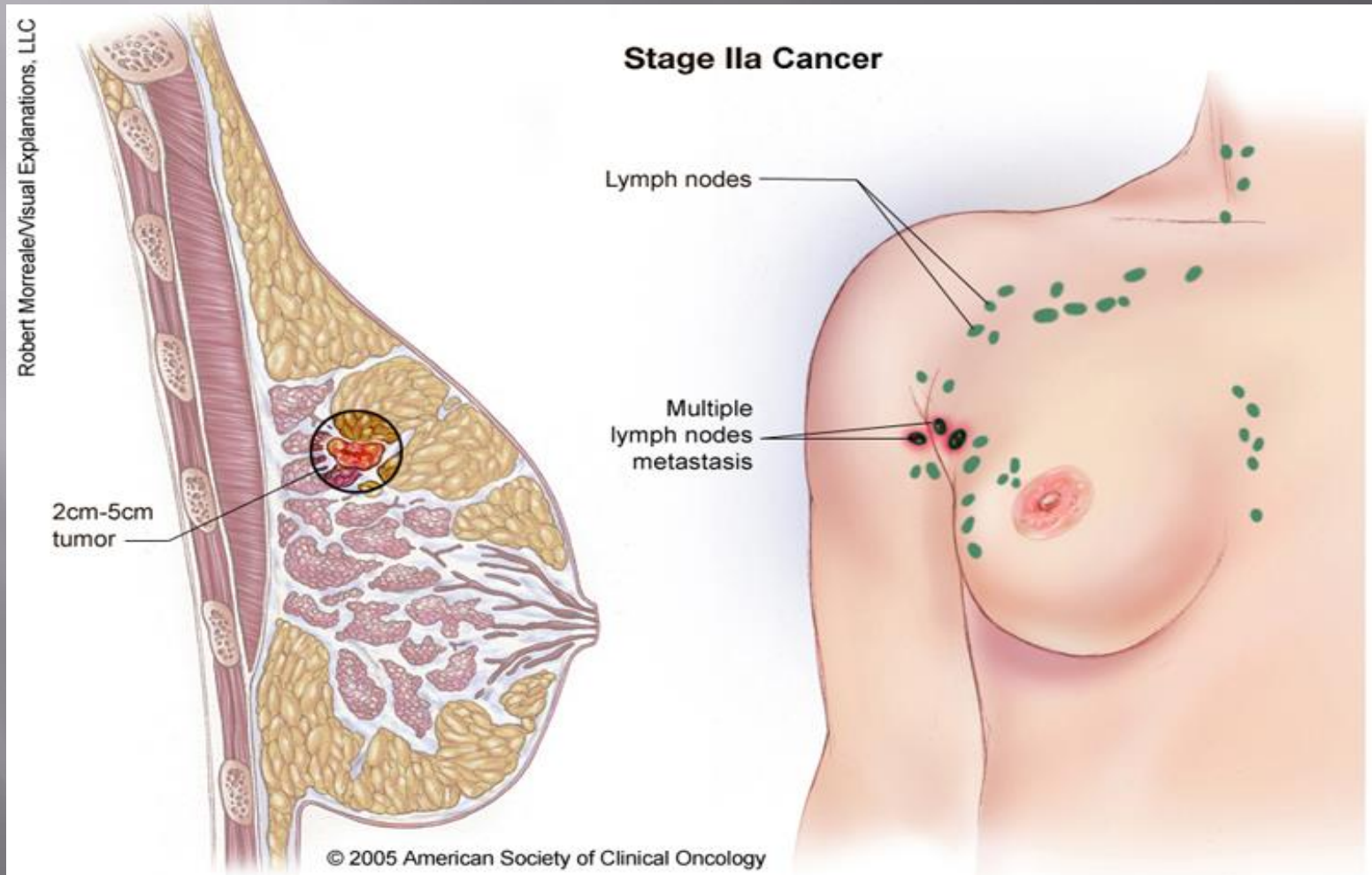
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## Stage I Cancer

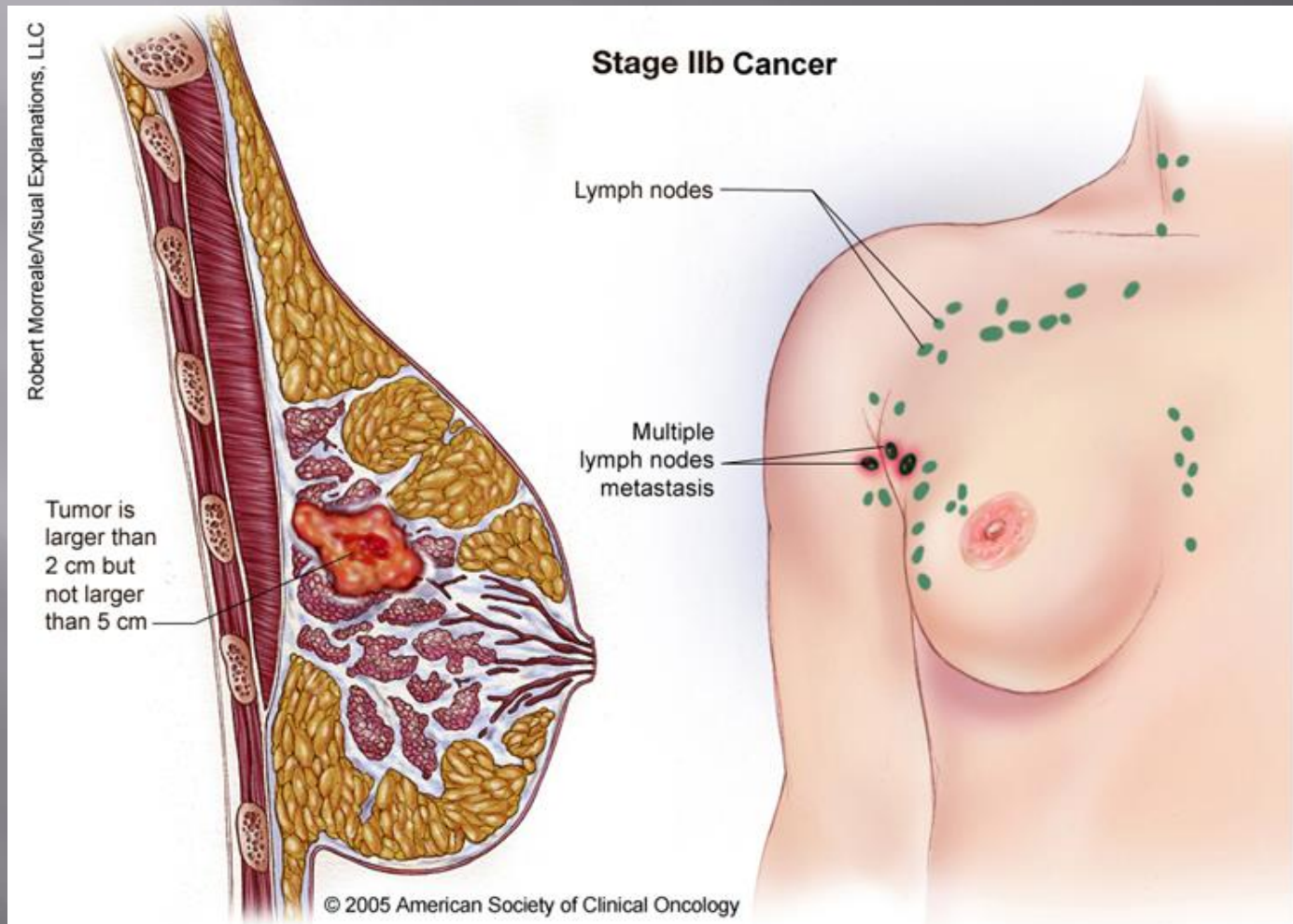
Tumor is  
less than  
or equal  
to 2 cm



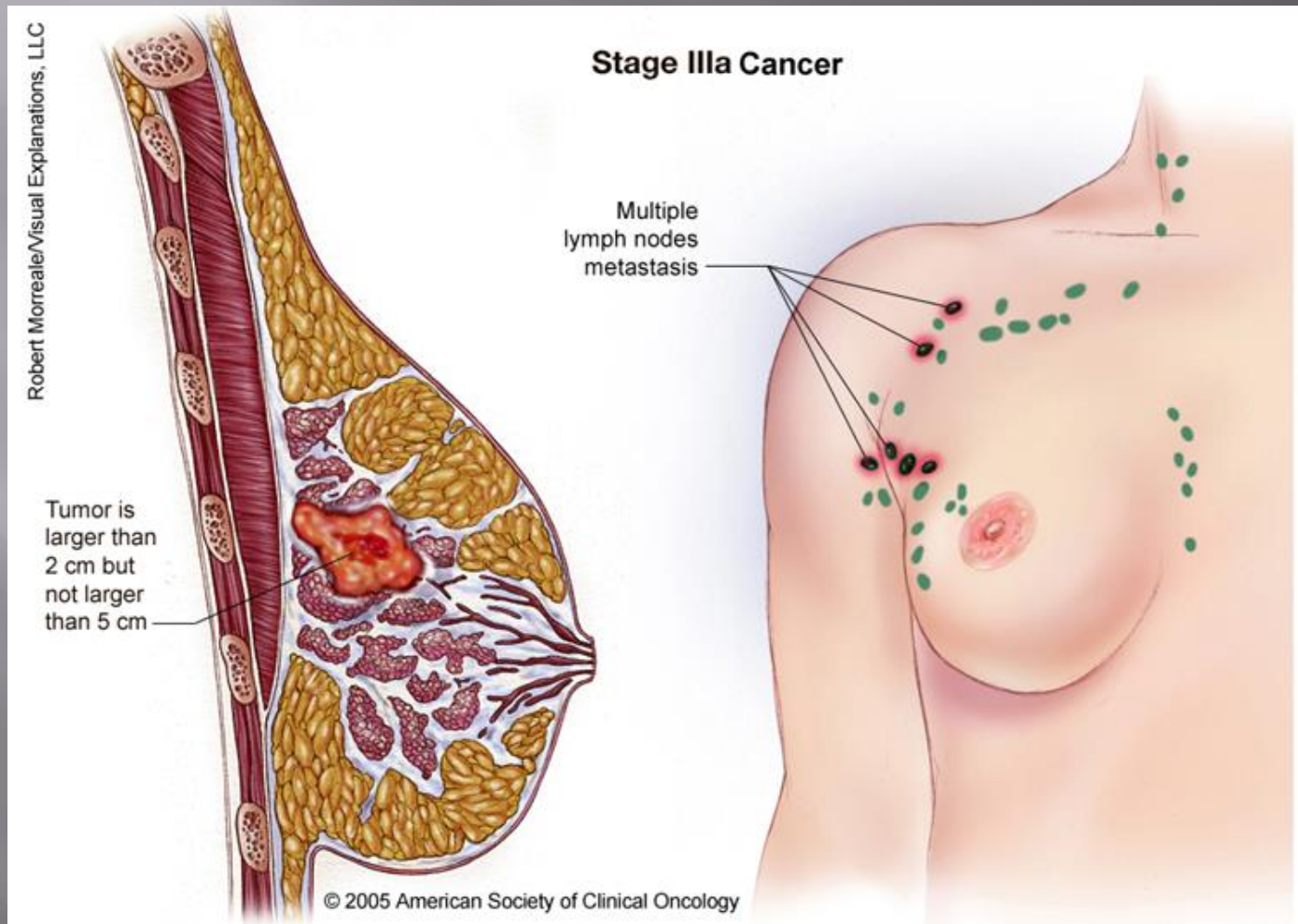
# Stage IIa Breast Cancer



# Stage IIb Breast Cancer

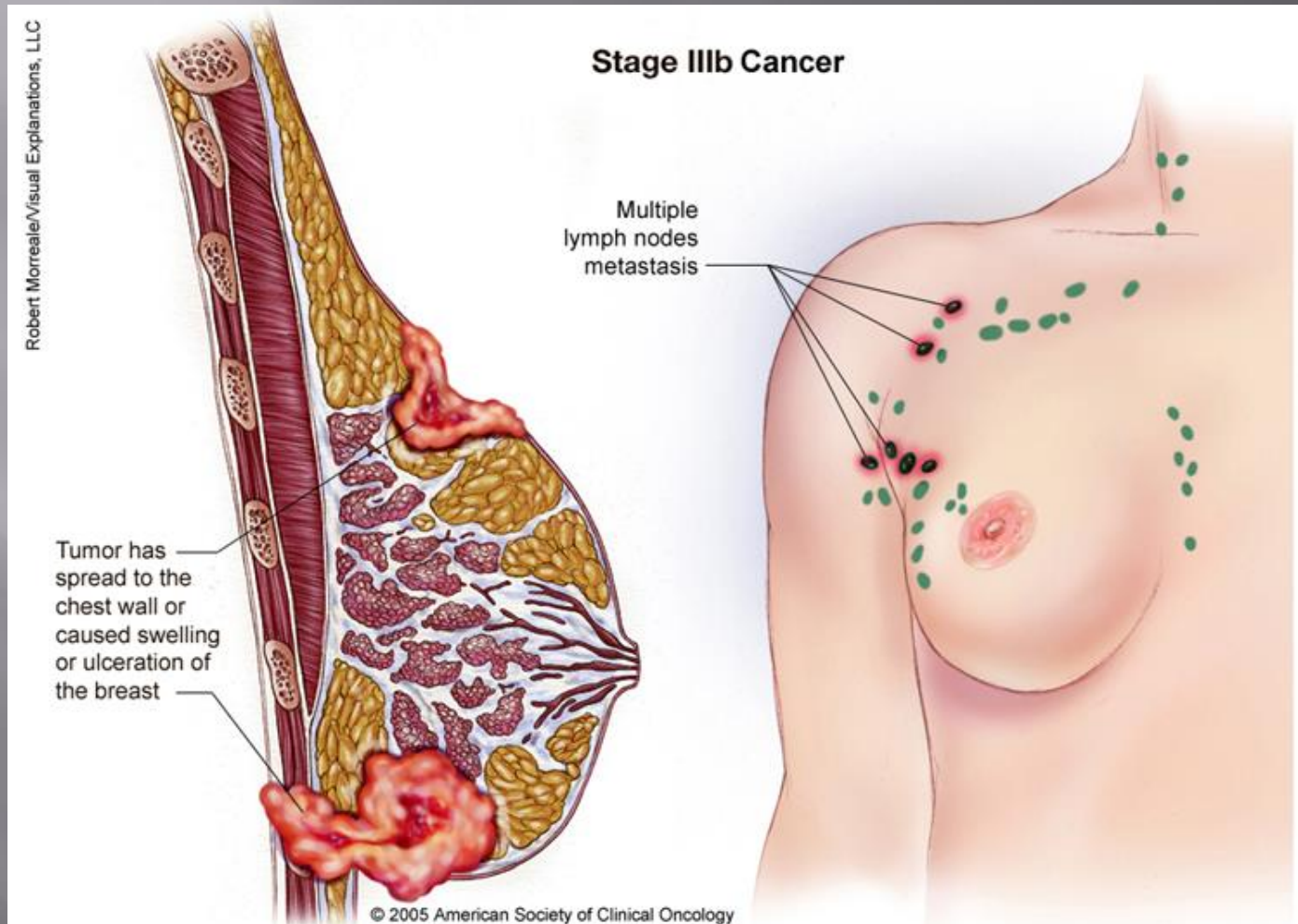


# Stage IIIa Breast Cancer



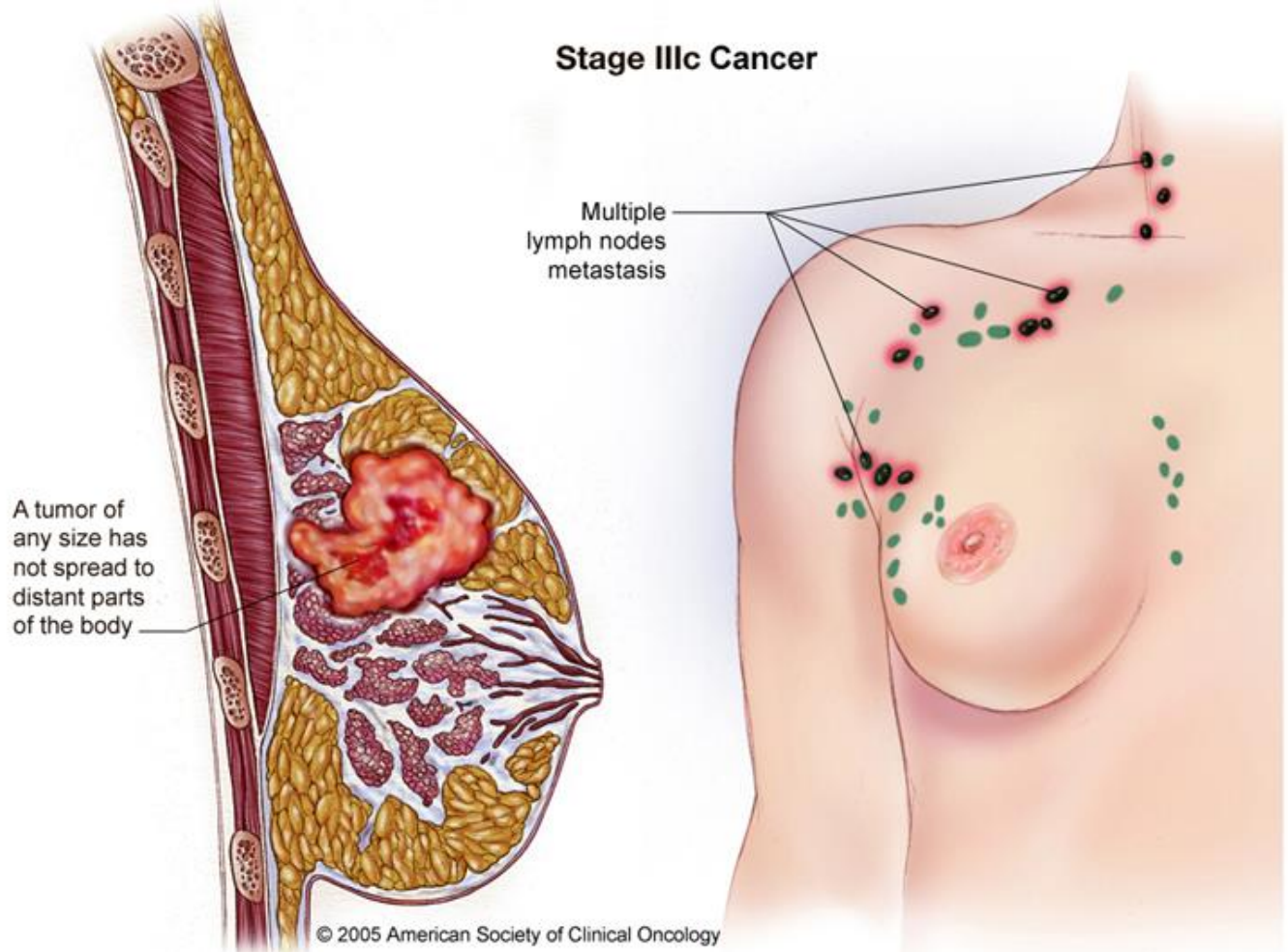


# Stage IIIb Breast Cancer

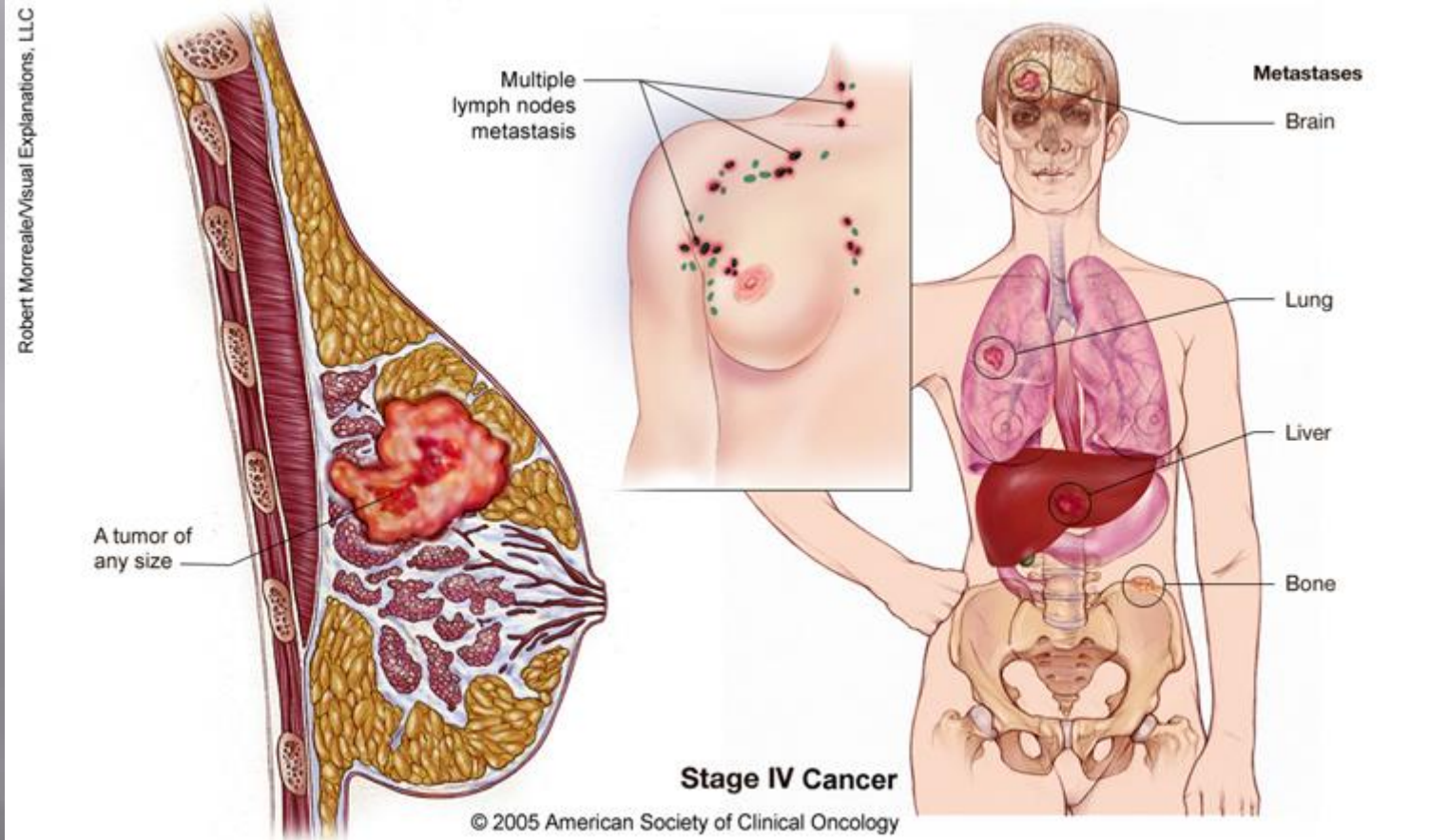


# Stage IIIC Breast Cancer

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# Stage IV Breast Cancer





# Risk factors related to Breast cancer

- ▣ Age
- ▣ Individual or family history of breast cancer
- ▣ A history of ovarian cancer
- ▣ A genetic predisposition (mutations to the BRCA1 or BRCA2 genes cause 2% to 3% of all breast cancers)
- ▣ Estrogen exposure
- ▣ Atypical hyperplasia of the breast
- ▣ Lobular carcinoma *in situ* (LCIS)
- ▣ Lifestyle factors (obesity, lack of exercise, alcohol use)

- ▣ Pre-menopause
- ▣ Post-menopause
- ▣ Smoking
- ▣ Alcohol Consumption
- ▣ Short breast feeding
- ▣ No breast feeding
- ▣ Gynecological problems
- ▣ Bovine Leukemia virus
- ▣ Radiation

# Breast Cancer

## Cancer Risk and Aging



# Epidemiology of Breast cancer in Pakistan

- ▣ The incidence rate was 45% of total cancer incidences in female during 2004-2011
- ▣ Death rate per 100,000 Age Standardized for breast cancer was estimated as 26.76
- ▣ One in three women will develop cancer in their lifetime
- ▣ Breast cancer makes up one third of all cancers in women
- ▣ Breast cancer incidence is continuously rising by 0.3% per year
- ▣ Lifetime risk of breast cancer is one in nine

# Breast Cancer and Early Detection

- ▣ Early diagnosis means a good chance of successful treatment
- ▣ Mammography is the best tool doctors for screening breast cancer
- ▣ It is recommend that women must obtain a mammogram each year, starting at the age of 40
- ▣ Regular clinical breast examinations and breast self-examinations are also recommended
- ▣ Women are encouraged to discuss the frequency of screening with their doctors

# What Are the Symptoms of Breast Cancer?

- ▣ New lumps or a thickening in the breast or under the arm
- ▣ Nipple tenderness, discharge, or physical changes
- ▣ Skin irritation or changes, such as puckers, dimples, scaliness, or new creases
- ▣ Warm, red, swollen breasts with a rash resembling the skin of an orange
- ▣ Pain in the breast (usually not a symptom of breast cancer, but should be reported to a doctor)
- ▣ No visible or obvious symptoms (asymptomatic)

# How is Breast Cancer Evaluated?

- ▣ Screening and/or diagnostic mammography
- ▣ Ultrasound
- ▣ Magnetic Resonance imaging (MRI) scan
- ▣ Biopsy is necessary to confirm a diagnosis
- ▣ Blood tests are often used to determine if the cancer has spread outside the breast



# Self examination of breast cancer

## 1st step

- ▣ Breasts that are their usual size, shape and color
- ▣ Breasts that are evenly shaped without visible distortion or swelling
- ▣ Dimpling, puckering, or bulging of the skin
- ▣ A nipple that has changed position or an inverted nipple (pushed inward instead of sticking out)
- ▣ Redness, soreness, rash, or swelling



# 2nd and 3<sup>rd</sup> step



- ▣ **Step 2:** Raise arms and look for the same changes
- ▣ **Step 3:** Infront of the mirror, look for any signs of fluid coming out of one or both nipples (this could be a watery, milky, or yellow fluid or blood)

## 4<sup>th</sup> step



- ▣ Feel breasts while lying down, using your right hand to feel your left breast
- ▣ Be sure about any hard mass in the breast

# 5<sup>th</sup> stage



- ▣ Finally, feel breasts while standing or sitting. Many women find that the easiest way to feel their breasts is when their skin is wet and slippery, so they like to do this step in the shower. Cover entire breast, using the same hand movements described in step 4

# How is Breast Cancer Treated?

- ▣ Treatment depends on stage of cancer
- ▣ More than one treatment may be used
- ▣ Surgery
- ▣ Radiation therapy
- ▣ Chemotherapy
- ▣ Hormone therapy
- ▣ Targeted therapy

