

المحاضرة الثانية - المرحلة الثانية - الفصل الدراسي الاول

جامعة المعارف - كلية التمريض

Adult Nursing تمريض البالغين

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Lecture two / Cancer

Cancer

Introduction

Cancer is the **second** leading cause of death globally, accounting for an estimated 9.6 million deaths, or **one** in **six** deaths, in 2018. **Lung, prostate, colorectal, stomach and liver cancer** are the most common types of cancer in **men**, while **breast, colorectal, lung, cervical and thyroid cancer** are the most common among **women**.

The cancer burden continues to grow globally, exerting tremendous physical, emotional and financial strain on individuals, families, communities and health systems. Many health systems in low- and middle-income countries are least prepared to manage this burden, and large numbers of cancer patients globally do not have access to timely quality diagnosis and treatment. In countries where health systems are strong, survival rates of many types of cancers are improving.

Definition of cancer

Cancer is a large group of diseases that can start in almost any organ or tissue of the body when abnormal cells grow uncontrollably, go beyond their usual boundaries to invade adjoining parts of the body and/or spread to other organs. The latter process is called **metastasizing** and is a major cause of death from cancer. A **neoplasm** and **malignant tumor** are other common names for cancer.

Cancer A neoplastic disorder that can involve all body organs. Cells lose their normal growth-controlling mechanism, and the growth of cells is uncontrolled.

Important Terms

Carcinoma A new growth or malignant tumor that originates from epithelial cells, the skin, gastrointestinal tract, lungs, uterus, breast, or other organ.

Benign: not cancerous; benign tumors may grow but are unable to spread to other organs or body parts

Malignant: having cells or processes that are characteristic of cancer

Metastasis: spread of cancer cells from the primary tumor to distant sites

Chemotherapy: the use of medications to kill tumor cells by interfering with cellular functions and reproduction.

Radiation Therapy: the use of ionizing radiation to kill malignant cells.

Type of cancer

Cancer is more than just one disease . There are many types of cancer. Cancer can develop anywhere in the body and is named for the part of the body where it started. **For instance**, breast cancer that starts in the breast is still called breast cancer even if it spreads (metastasizes) to other parts of the body.

There are two main categories of cancer:

- **Hematologic (blood) cancers** are cancers of the blood cells, including **leukemia, lymphoma, and multiple myeloma.**
- **Solid tumor cancers** are cancers of any of the other body organs or tissues. The most common solid tumors are **breast, prostate, lung, and colorectal cancers.**

Cancer/Carcinoma (**Solid Tumors**) generally refers to cancers that arise from **epithelial surfaces** and **cells** that line glands: / Skin/Epidermis, Glands,

Intestines , Bronchus , Breast , Prostate , Pancreas, Thyroid , Kidney , Testis , Ovary , Adrenals , Liver , Cervix

Major Types of Carcinomas

- **Adenocarcinoma** any gland (breast, prostate, lung, pancreas, ovary, colon...).
- **Squamous cell carcinoma** any surface or lining of mucous membrane (skin, lung, head and neck).
- **Others** Urothelial (bladder), islet pancreas

The Hematologic Malignancies: Lymphomas and Leukemia's "Liquid" Tumors
Tumors of lymph nodes and blood cells

Types of Lymphomas

- Hodgkin's lymphoma Characteristic appearance and clinical presentation
Specific type of cell Various types Specific response to therapy
- Non-Hodgkin's lymphoma Wide variety of pathologic subtypes Wide range of presentations and outcomes Differing treatments than for Hodgkin's lymphoma

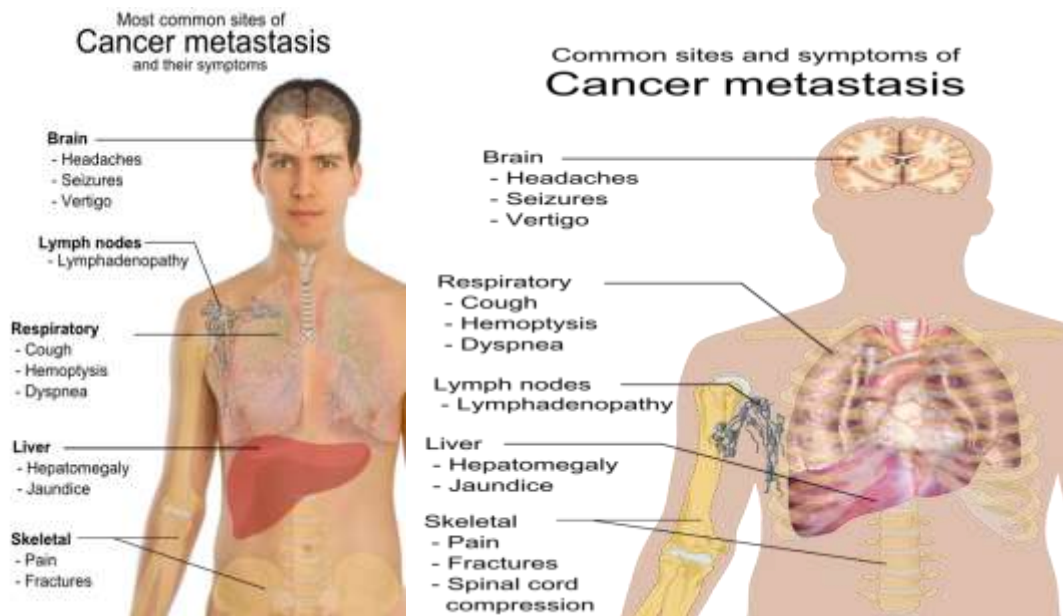
The Leukemia's Malignant cells arising from cells of the bone marrow

- White cells (myeloid cells, lymphoid cells, monocytes)
- Red cells (erythroleukemia)
- Platelets (megakaryocytic leukemias)
- Plasma cells (myeloma)

Sarcomas

Neither **carcinoma** nor **hematologic malignancy** arise from **soft tissues** or bone
Wide spectrum of sites and presentations

- Osteosarcoma (bone)
- Chondrosarcoma (cartilage)
- Synovial cell sarcoma (joint)
- Leiomyosarcoma (muscle)
- Liposarcoma (fat) Rhabdomyosarcoma (primitive muscle)
- Angiosarcoma (blood vessel, Kaposi's) ...



Causes of Cancer

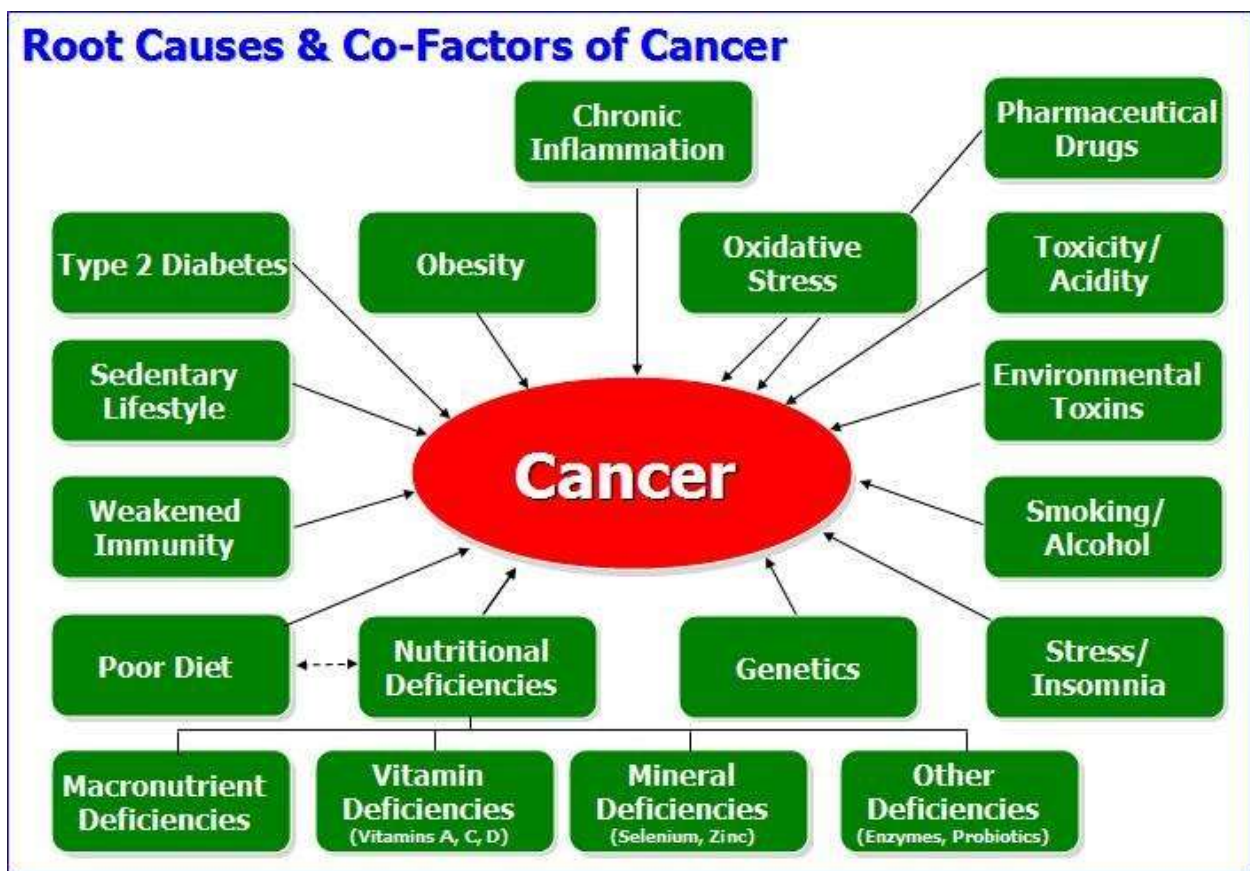
Primary causes

- Unknown

Secondary causes

- Chemical and radiation substance exposure

- Immunology
- Genetic predisposition
- Tobacco use ± Alcohol excess
- Lack of physical activity
- Environment and Diet
- Virus
- Sun exposure



Signs and Symptoms of Cancer

The signs and symptoms may differ according to the categories of cancer, anyway the **Cancer Warning Signs** summary in words **Caution**

- **Change in bowel or bladder habits**, abdominal pain Constipation, diarrhea or a change in the size of your stool can be a sign of colorectal cancer. Blood in the urine can be a sign of bladder or kidney cancer.
- **A sore that doesn't heal** Skin cancer may bleed and look like sores that don't heal.
- **Unusual bleeding or discharge** Coughing up blood may be a sign of lung cancer. Blood in the stool could be a sign of colon or rectal cancer. Abnormal vaginal bleeding can be a sign of cervical or endometrial cancer. Bloody discharge from the nipple may be a sign of breast cancer.
- **Thickening or a lump**, in the breast or elsewhere on your body Many cancers can be felt through the skin such as breast, testicle, lymph nodes and the soft tissues of the body.
- **Indigestion or swallowing problems** (chronic) These problems may be signs of esophagus, stomach or throat cancer.
- **Obvious change in a wart or mole** Any wart, mole or freckle that changes in color, size or shape or loses its sharp border should be seen by a doctor.
- **Nagging cough, hoarseness or shortness of breath** A persistent cough could be a sign of lung cancer. Hoarseness can be a sign of cancer of the thyroid or throat.

Diagnosis of Cancer

Diagnostic Methods in order to arrive at a diagnosis, a physician employs several methods. A common grouping is:

Non—microscopic methods

- (1) Clinical only

(2) Clinical investigations

(a) Laboratory examinations

(b) Radiological examinations or X— rays

(c) Ultrasound

(d) Nuclear medicine

(e) CT scan

(f) Magnetic resonance imaging MRI

(g) Endoscopy

(3) Exploratory surgery/autopsy

(4) Specific biochemical and/or immunological tests

B. Microscopic methods

1. Cytology or hematology

2. Histology of metastasis

3. Histology of primary tumor

4. Autopsy

Staging of Cancer

Tumor Staging and Grading

A complete diagnostic evaluation include identifying the stage and grade of the tumor.

Staging. Staging determines the size of the tumor and the existence of local invasion and distant metastasis.

There is more than one system for staging

TNM system is used most often , Biopsy, CT, MRI, PET, Ultrasound, blood tests all help determine stage

T. The extent of the primary tumor

N. The absence or presence and extent of regional lymph node metastasis

M The absence or presence of distant metastasis

G Degree of differentiation Letters or numbers after the T, N, and M give more details about each of these factors Once established, T, N, and M are then sub grouped into stage class , **Stage I to Stage IV**

The stage of the cancer is very important in choosing the best treatment for a person.

Primary tumour (T)

TX	Primary tumour cannot be assessed
TO	No evidence of primary tumour
Tis	Carcinoma <i>in situ</i>
T1	Tumour invades lamina propria
T2	Tumour invades muscularis propria
T3	Tumour invades adventitia
T5	Tumour invades adjacent structures

Regional lymph nodes (N)

NX	Regional lymph nodes cannot be assessed
NO	No regional lymph node metastases
N1	Regional lymph node metastases

Distant metastases (M)

MX	Presence of distant metastases cannot be assessed
MO	No distant metastases
M1	Distant metastases

Treatment of cancer

1. Chemotherapy
2. Radiotherapy
3. Surgery



Principles of Cancer Treatment

Cancer Treatment



Prevention of Cancer

- **Primary prevention.** Primary prevention is concerned with reducing risks of disease through **health promotion** strategies.
- **Secondary prevention.** Secondary prevention programs promote screening and early detection activities such as breast and testicular self-examination and Papanicolaou (Pap) tests

Complication of cancer

- Impaired immune and hematopoietic (blood producing) function
- Altered gastrointestinal tract structure and function
- Motor and sensory deficits
- Decreased respiratory function.

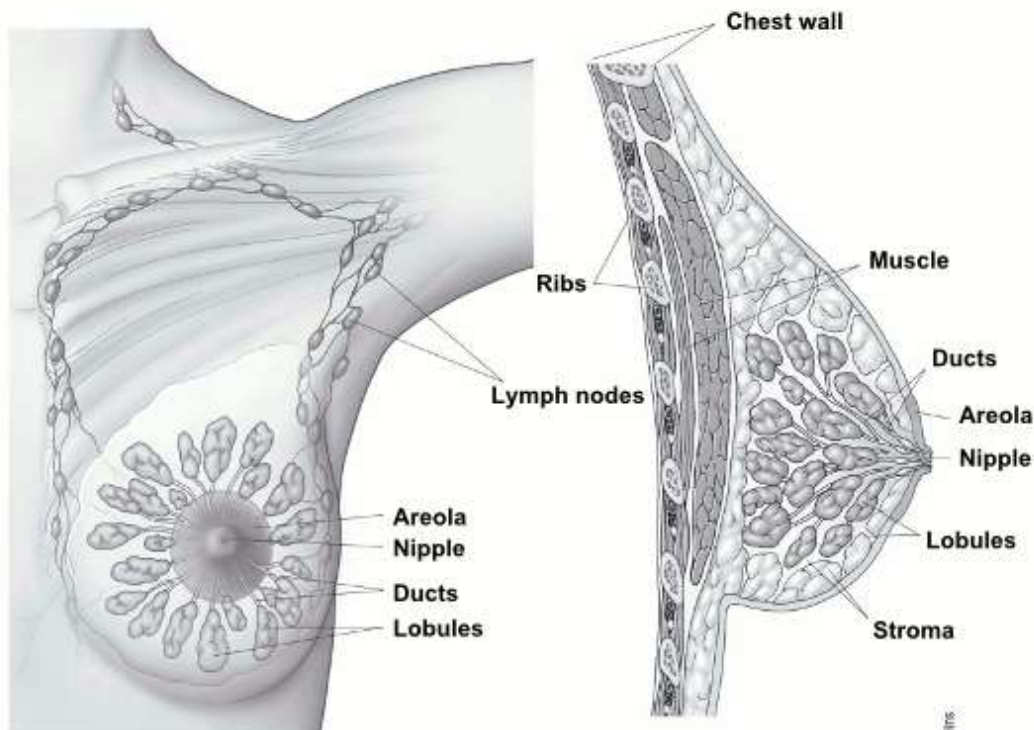
Breast Cancer

Breast cancer is a malignant tumor that starts in the cells of the breast.

A **malignant tumor** is a group of cancer cells that can grow into (invade) surrounding tissues or spread (metastasize) to distant areas of the body. The disease occurs almost entirely in women, but men can get it, too.

*The normal breast

The female breast is made up mainly of **lobules** (milk-producing glands), **ducts** (tiny tubes that carry the milk from the lobules to the nipple), and **Stroma** (fatty tissue and connective tissue surrounding the ducts and lobules, blood vessels, and lymphatic vessels).

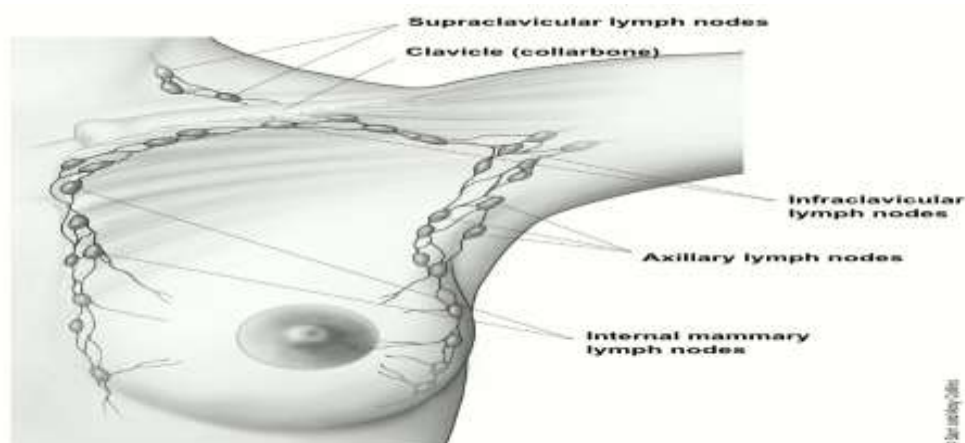


Normal breast tissue

Most breast cancers begin in the cells that line the ducts (*ductal* cancers). Some begin in the cells that line the lobules (*lobular* cancers), while a small number start in other tissues.

****The lymph (lymphatic) system of the breast**

The lymph system is important to understand because it is one way breast cancers can spread. This system has several parts. Lymph nodes are small, bean-shaped collections of immune system cells (cells that are important in fighting infections) that are connected by lymphatic vessels. Lymphatic vessels are like small veins, except that they carry a clear fluid called *lymph* (instead of blood) away from the breast. Lymph contains tissue fluid and waste products, as well as immune system cells. Breast cancer cells can enter lymphatic vessels and begin to grow in lymph nodes. Most lymphatic vessels in the breast connect to lymph nodes under the arm (*axillary nodes*). Some lymphatic vessels connect to lymph nodes inside the chest (*internal mammary nodes*) and either above or below the collarbone (*supraclavicular* or *infraclavicular nodes*).



Lymph nodes in relation to the breast

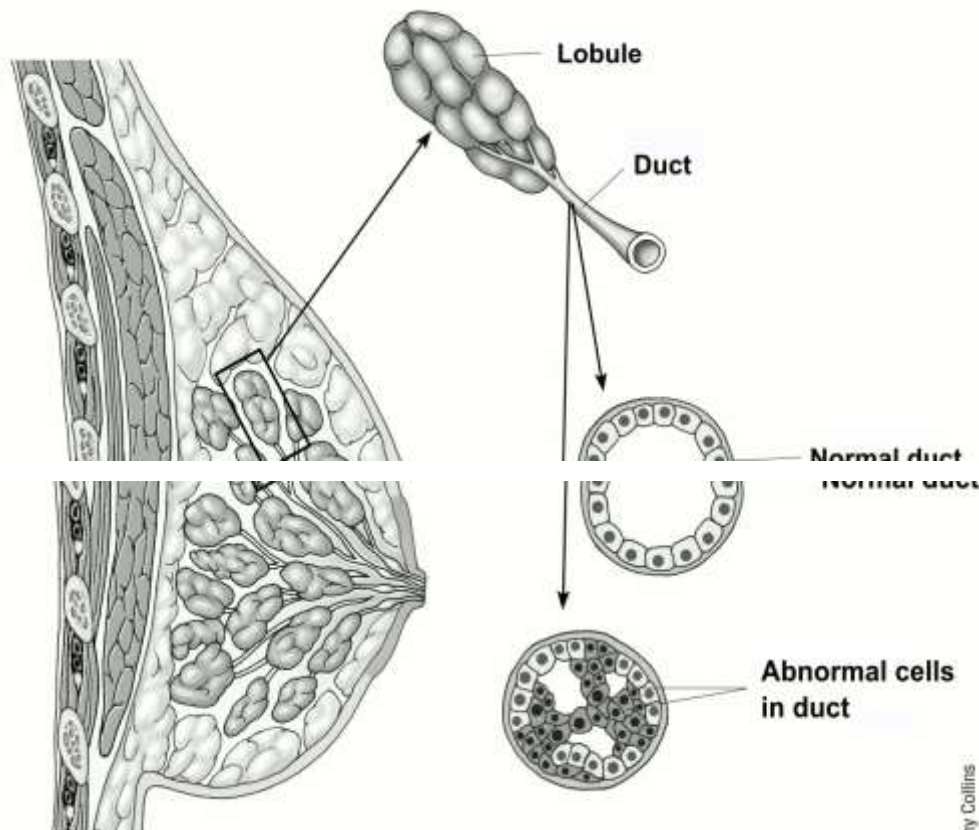
If the cancer cells have spread to lymph nodes, there is a higher chance that the cells could have also gotten into the bloodstream and spread (metastasized) to other sites in the body. The more lymph nodes with breast cancer cells, the more

likely it is that the cancer may be found in other organs as well. Because of this, finding cancer in one or more lymph nodes often affects the treatment plan. Still, not all women with cancer cells in their lymph nodes develop metastases, and some women can have no cancer cells in their lymph nodes and later develop metastases.

***Types of breast cancers

a type of cancer that starts in the cells (epithelial cells) that line organs and tissues like the breast.

- 1- **Adenocarcinoma** : is carcinoma that starts in glandular tissue.
- 2- **Sarcomas** : start in the cells of muscle, fat, or connective tissue
- 3- **Ductal carcinoma in situ** : Ductal carcinoma in situ (DCIS; also known as *intraductal carcinoma*) is considered noninvasive or pre-invasive breast cancer.



Ductal carcinoma in situ

- 4- **Invasive (or infiltrating) ductal carcinoma** : This is the most common type of breast cancer. Invasive (or infiltrating) ductal carcinoma (IDC) starts in a milk duct of the breast, breaks through the wall of the duct, and grows into the fatty tissue of the breast.
- 5- **Invasive (or infiltrating) lobular carcinoma** : Invasive lobular carcinoma (ILC) starts in the milk-producing glands (lobules). Like IDC, it can spread (metastasize) to other parts of the body.

*****Less common types of breast cancer*****

- 1- **Inflammatory breast cancer** : This uncommon type of invasive breast cancer accounts for about 1% to 3% of all breast cancers.



- 2- **Paget disease of the nipple** : This type of breast cancer starts in the breast ducts and spreads to the skin of the nipple and then to the areola, the dark circle around the nipple.
- 3- **Phyllodes tumor** : This very rare breast tumor develops in stroma (connective tissue) of the breast, in contrast to carcinomas, which develop in the ducts or lobules.
- 4- **Angiosarcoma** : This form of cancer starts in cells that line blood vessels or lymph vessels.

Incidence

Breast cancer is the most common cancer among American women, except for skin cancers. About 1 in 8 (12%) women in the US will develop invasive breast cancer during their lifetime. The American Cancer Society's estimates for breast cancer in the United States for 2015

are:

- About 231,840 new cases of invasive breast cancer will be diagnosed in women.
- About 60,290 new cases of carcinoma in situ (CIS) will be diagnosed (CIS is noninvasive and is the earliest form of breast cancer).
- About 40,290 women will die from breast cancer. Breast cancer is the second leading cause of cancer death in women, exceeded only by lung cancer.

Risk factors for breast cancer

- 1- **Gender** (women more than men because men have less of the female hormones estrogen and progesterone, which can promote breast cancer cell growth) .
- 2- **Aging** (About 1 out of 8 invasive breast cancers are found in women younger than 45, while about 2 of 3 invasive breast cancers are found in women age 55 or older) .
- 3- **Genetic** (About 5% to 10% of breast cancer cases are thought to be hereditary, meaning that they result directly from gene defects (called *mutations*) inherited from a parent) **BRCA1 and BRCA2**: The most common cause of hereditary breast cancer is an inherited mutation in the *BRCA1* and *BRCA2* genes. In normal cells, these genes help prevent cancer by making proteins that keep the cells from growing abnormally. If you have

inherited a mutated copy of either gene from a parent, you have a high risk of developing breast cancer during your lifetime. Although in some families with *BRCA1* mutations the lifetime risk of breast cancer is as high as 80%, on average this risk seems to be in the range of 55 to 65%. For *BRCA2* mutations the risk is lower, around 45%.

- 4- **Race and ethnicity** : (Overall, white women are slightly more likely to develop breast cancer than are African- American women, but African- American women are more likely to die of this cancer. However, in women under 45 years of age, breast cancer is more common in African- American women. Asian, Hispanic, and Native- American women have a lower risk of developing and dying from breast cancer) .
- 5- **Menstrual periods** (Women who have had more menstrual cycles because they started menstruating early (before age 12) and/or went through menopause later (after age 55) have a slightly higher risk of breast cancer. The increase in risk may be due to a longer lifetime exposure to the hormones estrogen and progesterone) .
- 6- **Previous chest radiation** (Women who, as children or young adults, had radiation therapy to the chest area as treatment for another cancer (such as lymphoma) have a significantly increased risk for breast cancer. This varies with the patient's age when they had radiation. If chemotherapy was also given, it may have stopped ovarian hormone production for some time, lowering the risk. The risk of developing breast cancer from chest radiation is highest if the radiation was given during adolescence, when the breasts were still developing. Radiation treatment after age 40 does not seem to increase breast cancer risk.
- 7- **Birth control** (use contraceptive , Depot-medroxyprogesterone acetate) .

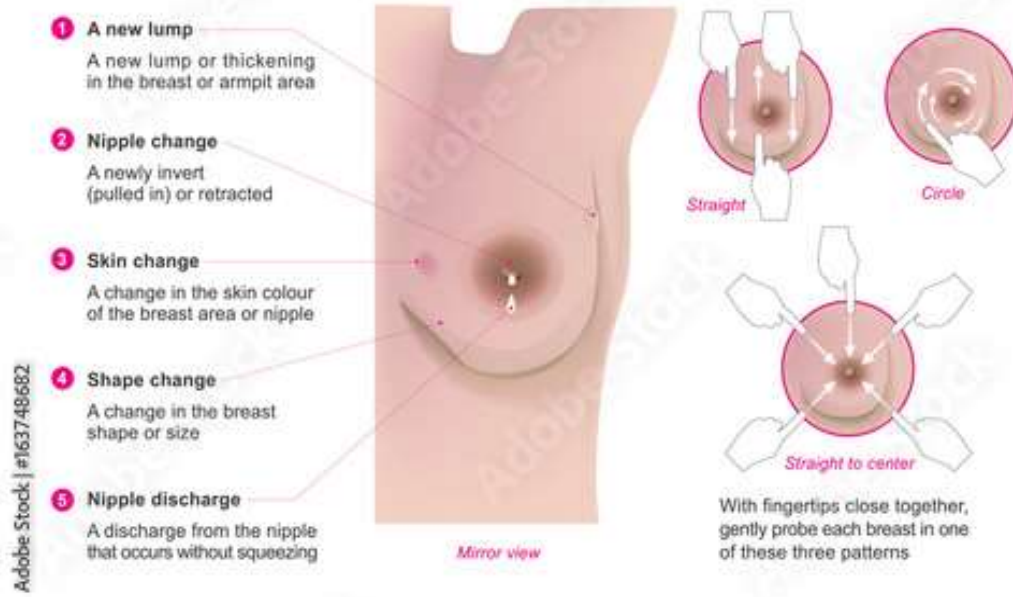
- 8- **Hormone therapy after menopause** (*post-menopausal hormone therapy* (PHT), *hormone replacement therapy* (HRT), and *menopausal hormone therapy* (MHT))
- 9- **Drinking alcohol**
- 10- **Being overweight or obese** (Being overweight or obese after menopause increases breast cancer risk.)
- 11- **Diet and vitamin intake** (a recent study found a higher risk of breast cancer in women who ate more red meat) .
- 12- **Tobacco smoke**
- 13- **Night work** (Several studies have suggested that women who work at night—for example, nurses on a night shift—may have an increased risk of developing breast cancer. Some researchers think the effect may be due to changes in levels of melatonin, a hormone whose production is affected by the body's exposure to light .

Signs and symptoms of breast cancer

The most common symptom of breast cancer is a new lump or mass. A painless, hard mass that has irregular edges is more likely to be cancerous, Other possible symptoms of breast cancer include:

- Swelling of all or part of a breast (even if no distinct lump is felt)
- Skin irritation or dimpling
- Breast or nipple pain
- Nipple retraction (turning inward)
- Redness, scariness, or thickening of the nipple or breast skin
- Nipple discharge (other than breast milk)

Early Signs of Breast Cancer and Breast self-examination






Breast cancer diagnosed

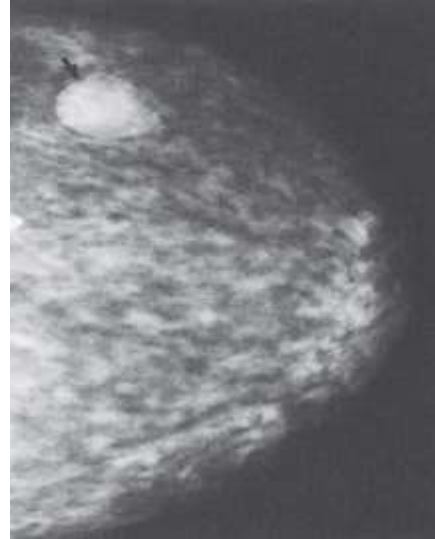
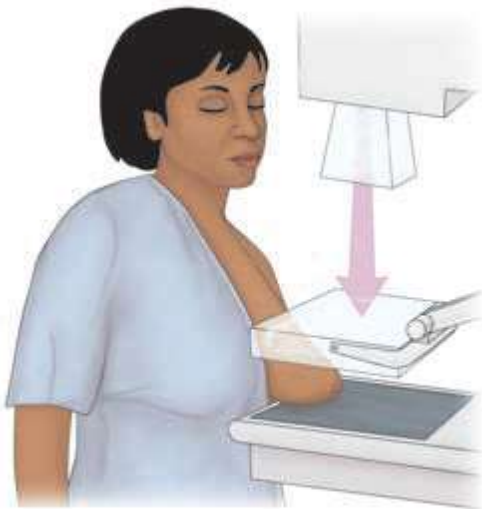
Breast cancer is sometimes found after symptoms appear, but many women with early breast cancer have no symptoms. This is why getting the recommended screening tests .

- 1- Medical history and physical exam
- 2- Mammograms
- 3- Breast ultrasound
- 4- Magnetic resonance imaging (MRI) of the breast
- 5- Other tests (Nipple discharge exam , Ductal lavage and nipple aspiration,
- 6- Biopsy(Fine needle aspiration biopsy, Core needle biopsy, Vacuum-assisted core biopsies , Surgical (open) biopsy, Lymph node biopsy)

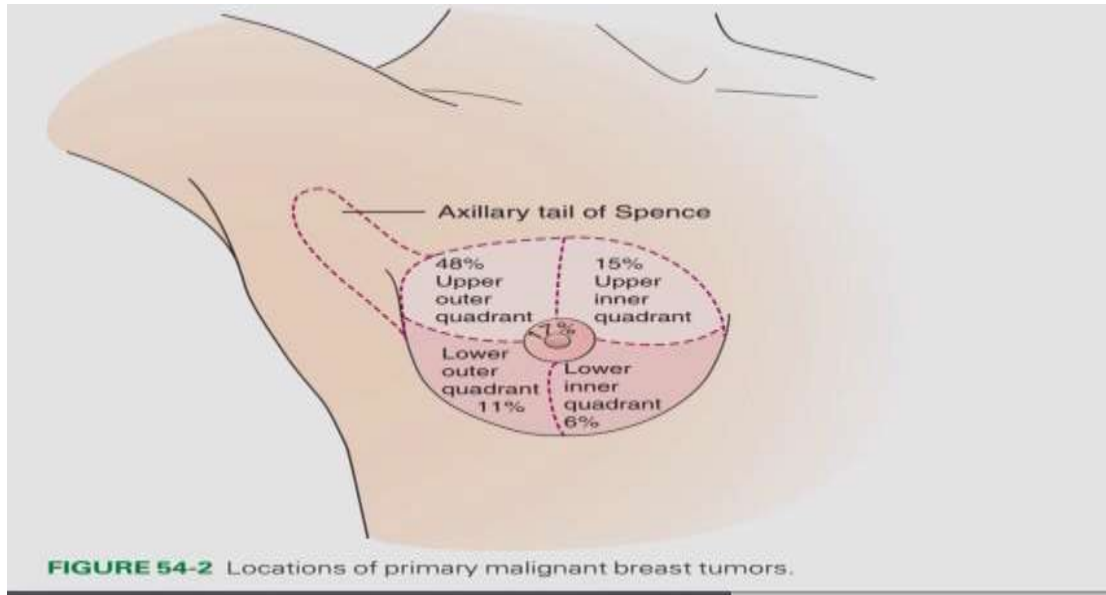
Table 48-1 • Variations in Breast Masses

The most common breast masses are due to fibrocystic changes, fibroadenomas, or malignancy. Biopsy is usually needed for confirmation, but the following characteristics are diagnostic clues:

CHARACTERISTICS	FIBROCYSTIC CHANGES	FIBROADENOMAS	MALIGNANCY
(Illustrations show how the lump may feel because it is usually not visible.)			
Age	30–60 years, regress after menopause except with use of estrogen therapy	Puberty to menopause	30–90 years; most common, 40–80 years
Number	Single or multiple	Usually single	Usually single
Shape	Round	Round, disk, or lobular	Irregular or stellate
Consistency	Soft to firm, usually elastic	Usually firm	Firm or hard
Mobility	Mobile	Mobile	May be fixed to skin or underlying tissues
Tenderness	Usually tender	Usually nontender	Usually nontender
Retraction signs	Absent	Absent	May be present



The mammography procedure

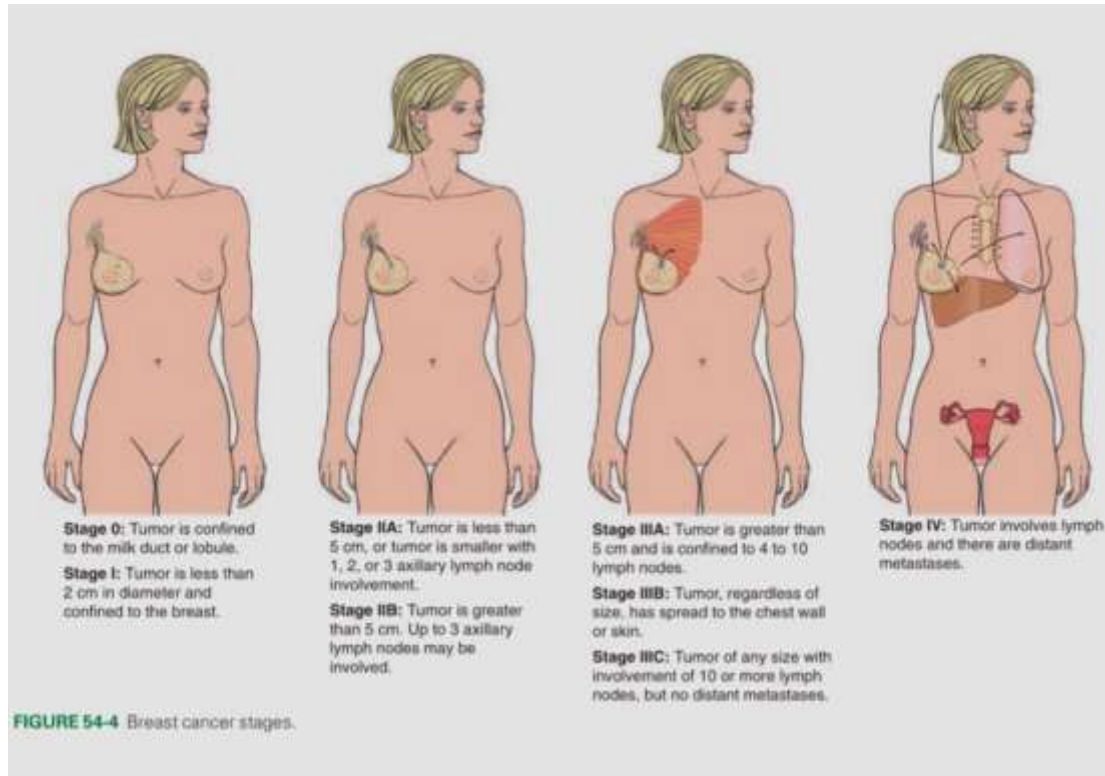


Breast cancer treated

The main types of treatment for breast cancer are:

- Surgery
- Radiation therapy
- Chemotherapy
- Hormone therapy
- Targeted therapy
- Bone direct therapy

Stage of Breast Cancer

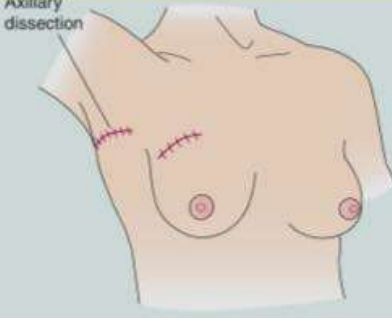

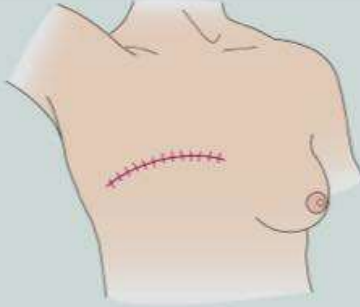



Breast cancer treatment guide line by stage at diagnosis

Stage	Tumor	Surgery	Chemotherapy	Radiation
Stage 0	DICS	TM or lumpectomy	Tamoxifen	For lumpectomy
Stage I	0-2cm	BCT or MRM	Considered for all invasive tumor	For BCT
Stage II	2-5cm	BCT or MRM	Regimen depends on tumor size and nodal status	For BCT
Stage III	More than 5cm	MRM	Postoperative and possibly preoperative	To chest wall and possibly axillae after MRM
Stage IV	Metastatic disease	Possible lumpectomy or MRM	To control progression and or palliation	To control progression and or palliation

DICS : ductal carcinoma in situ , TM : total mastectomy , BCT : breast conservation treatment (lumpectomy and axillary dissection) , MRM : modified radical mastectomy

Surgical procedure for breast cancer

PROCEDURE	DESCRIPTION	ILLUSTRATION
Lumpectomy	Only the tumor is removed; some axillary lymph nodes may be excised at the same time for microscopic examination.	 An illustration of a woman's upper torso showing a lumpectomy. A small, localized area on the left breast is marked with a red circle. A red line indicates the surgical incision. A label 'Axillary dissection' points to a red line on the left armpit. The right breast is also shown with a red circle around the nipple.
Partial or segmental mastectomy	The tumor and some breast tissue and some lymph nodes are removed.	 An illustration of a woman's upper torso showing a partial or segmental mastectomy. A larger area on the left breast is marked with a red circle and a purple triangle. A red line indicates the surgical incision. A red line on the left armpit indicates axillary dissection. The right breast is shown with a red circle around the nipple.
Simple or total mastectomy	All breast tissue is removed. No lymph node dissection is performed.	 An illustration of a woman's upper torso showing a simple or total mastectomy. A long, horizontal red line indicates the surgical incision across the chest. The right breast is shown with a red circle around the nipple.
Subcutaneous mastectomy	All breast tissue is removed, but the skin and nipple are left intact.	 An illustration of a woman's upper torso showing a subcutaneous mastectomy. The breast tissue is removed, leaving the skin and nipple intact. The right breast is shown with a red circle around the nipple.


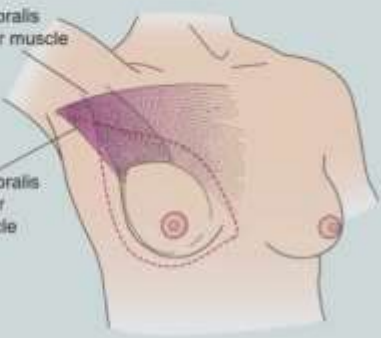
PROCEDURE	DESCRIPTION	ILLUSTRATION
Modified radical mastectomy	The breast, some lymph nodes, the lining over the chest muscles, and the pectoralis minor muscle are removed	 <p>Pectoralis minor muscle</p>
Radical mastectomy	The breast, axillary lymph nodes, and pectoralis major and minor muscles are removed. In some instances, sternal lymph nodes also are removed.	 <p>Pectoralis minor muscle</p> <p>Pectoralis major muscle</p>

Table 49-5 • Chemotherapy and Hormonal Therapy for Breast Cancer

TYPE OF TREATMENT	GOALS OF THERAPY	POSSIBLE SIDE EFFECTS	NURSING INTERVENTIONS
Chemotherapy			
doxorubicin (Adriamycin) (A)	Destroy neoplastic cells Decrease or prevent metastasis	ECG changes, tachycardia, nausea, vomiting, stomatitis, hair loss; severe cellulitis if infiltration occurs	<i>Nausea and vomiting:</i> Administer antiemetics as prescribed; monitor fluid intake and output
cyclophosphamide (Cytoxan) (C)		Nausea, vomiting, anorexia, menstrual abnormalities, hemorrhagic cystitis	<i>Anorexia:</i> Assist patient and family to identify appetizing foods; provide frequent small meals if better tolerated than three regular meals; refer to dietician for assistance in planning palatable, nutritious meals
methotrexate (M) 5-fluorouracil (F)		Stomatitis, CNS changes, hair loss CNS changes, neurotoxicity, nausea, vomiting, constipation, stomatitis	<i>Stomatitis:</i> Avoid commercial mouthwashes; use baking soda, salt and water rinses, or oral anesthetic agents
paclitaxel (Taxol) (T)		Hypersensitivity, peripheral neuropathy, nausea, vomiting, diarrhea, stomatitis, hair loss	<i>Hair loss:</i> Avoid brushing, blow drying, frequent shampooing; encourage use of turbans and scarves; encourage patient to obtain wig before hair loss occurs
epirubicin (Ellence) (E)		Myelosuppression; cardiac toxicity; nausea, vomiting, and mucositis	<i>CNS changes:</i> Monitor for weakness, malaise, fatigue, seizures, change in cognitive status; assist with activities of daily living if fatigue and malaise occur
docetaxel (Taxotere) (T)		Hypersensitivity; neurosensory disturbances; nausea, vomiting, stomatitis	<i>Neurotoxicity:</i> Monitor deep tendon reflexes, assess gait and muscle strength, monitor for changes in sensory function
Combination therapy: CMF CAF AC ACT CEF		Side effects of all agents used	<i>Fluid retention:</i> Monitor weight, fluid intake and output, skin turgor <i>Cardiac changes:</i> Monitor ECG, cardiac rate and rhythm; notify physician of dysrhythmias <i>Hypercalcemia:</i> Monitor serum calcium levels, monitor cardiac rate and rhythm <i>Constipation:</i> Monitor bowel function; consider that constipation may be indicative of neurotoxicity; administer stool softeners, laxatives as prescribed; encourage adequate intake of fluids and fiber <i>Anxiety:</i> Administer tranquilizers as prescribed; encourage use of strategies to minimize anxiety (imagery, relaxation)
Hormonal Therapy			
<i>Androgens</i> fluormesterone (Halotestin)	Suppress estrogens	Masculinization, fluid retention, cholestatic jaundice, hypercalcemia	<i>Hormonal instability:</i> Observe for changes (hot flashes, vaginal bleeding, flare); facial hirsutism, deepening of voice; fluid retention, Cushing's syndrome (fullness of face, lower extremity edema, weight gain); increased blood pressure; assess for thrombophlebitis; monitor serum calcium levels; educate patient on symptom management of hot flashes and assure patient that most changes are temporary
<i>Estrogens</i> diethylstilbestrol (DES)	Suppress FSH and LH	Nausea, vomiting, anorexia, dizziness, headache	
<i>Corticosteroids</i> prednisone	Suppress estrogen production by the adrenals and decrease urinary estrogen metabolites	Cushing's syndrome: fullness of face, weight gain, edema of lower extremities	
<i>Antihormonal agents</i> tamoxifen (Nolvadex)	Estrogen antagonist; effective in decreasing risk for cancer recurrence in postmenopausal women and as a palliative treatment for recurrent cancer	Weight gain, hot flashes, nausea, anorexia, lethargy	
megestrol acetate (Megace)	Progestational agent; may decrease number of estrogen receptors in breast tissue	Weight gain, hot flashes, vaginal bleeding, increased blood pressure, peripheral edema, depression, tumor flare	
aminoglutethimide (Cytadren)	Enzyme antagonist that inhibits estrogen synthesis	CNS changes: dizziness, clumsiness, drowsiness, depression, headache	
anastrozole (Arimidex)	Aromatase inhibitor; blocks production of estrogen in peripheral tissues	Asthenia, nausea, headache, hot flashes, back pain	

*This listing of medications, side effects, and nursing interventions is not meant to be exhaustive but is rather a sample of frequently used chemotherapeutic agents for breast cancer.

FSH, follicle-stimulating hormone; LH, luteinizing hormone.

Nursing diagnosis and nursing intervention

1- Anxiety and fear

- Provide an opportunity for the client to express feelings and discuss concerns. Verbalizing helps the client deal openly with feelings.
- Answer all questions; consult with other team members about matters that involve their expertise. Presenting facts provides the client with reality-based information and reduces exaggerated perceptions.
- Collaborate with physician on arranging for a visit from a Reach to Recovery or I Can Cope volunteer sponsored by the American Cancer Society. People who have recovered from a similar diagnosis and surgery can serve as role models and answer questions from their own personal experiences.
- Do not stifle crying; stay with client when emotions are overwhelming. Crying relieves tension when a person can find no other coping strategy.
- Encourage client's significant other or whomever the client turns to for support to remain with client as much and as long as possible. The presence of others who provide emotional support reduces anxiety.
- Keep client informed of the routine that will be followed in preparation for surgery and postoperative care. Dealing with unexpected events heightens anxiety; knowledge facilitates a sense of control.

2- Deficient knowledge related to surgical routines

- Explain that the arm on the surgical side may be elevated and movement away from the body (abduction) may be temporarily restricted. Elevation reduces edema. Abduction is temporarily restricted until healing progresses.

3- Hemorrhage and shock

- Obtain vital signs according to agency routines. Do not take blood pressure on the arm on the side of the mastectomy. The circulation of blood and lymph can be further compromised if the arm on the side of the mastectomy is used to measure blood pressure, to take blood specimens, or for intravenous (IV) infusions or injections.
- Check color and amount of blood loss from the wound and drain, if one is present. An increase in the volume or change to bright red color suggests excessive or arterial blood loss.

- Feel underneath client's side or back for obscured bleeding. Gravity can cause blood to drain posteriorly.
- Administer IV fluids or blood transfusions at the rate prescribed.

Fluid replacement offsets fluid losses.

4- Risk for Ineffective Breathing Pattern and Ineffective Airway Clearance related to pain, weak cough, and bulky dressing

- Instruct client to deep breathe and cough every 2 hours during waking hours or use an incentive spirometer. Deep breathing distends alveoli and promotes increased gas diffusion.
- Splint incision to reduce discomfort. Pain or fear of pain interferes with deep breathing.
- Administer oxygen as prescribed. Supplemental oxygen provides a higher concentration than found in room air.
- Instruct client to self-administer analgesia before deep breathing and coughing if a patient-controlled analgesia (PCA) pump is available. Pain is more adequately controlled when an analgesic is given before severe pain develops.

5- Acute Pain related to tissue trauma

- Administer pain medication liberally according to prescribed dose and frequency. Clients have the right to pain relief.
- Avoid giving injections in the arm on the same side as the surgery. Circulation of blood and lymph is impaired, which can affect the absorption of parenteral medication and increases the potential for infection.
- Monitor response to analgesia 30 minutes after administration or more frequently if PCA is in use. The nurse is obligated to use additional measures to reduce the client's pain until it is at her or his tolerable level.
- Pin the tubing of the drain or the drain collection chamber to the client's gown. Stabilizing the drain helps prevent it from pulling at the insertion site and increasing discomfort.
- Implement nursing techniques such as changing positions, relaxation, distraction, and guided imagery. Non pharmacologic measures supplement or complement analgesia.
- Collaborate with the physician if pain control is inadequate. The nurse consults with the physician to determine possible changes in the type of analgesic, its dose, or frequency.

6- Impaired Skin Integrity and Risk for Infection secondary to surgical wound

- Limit movement, especially abduction, of the arm on the side of surgery until the wound edges are intact. Activity can disrupt the approximation of the incision.
- Inspect the wound for swelling, unusual drainage, odor, redness, or separation of the suture line. Wound infections are accompanied by signs of inflammation and a delay in healing.
- Empty and re-establish negative pressure in closed wound drains at least once per shift. Negative pressure (suction) pulls fluid from the incisional area, which facilitates healing.
- Administer antibiotic therapy as prescribed. Antibiotics destroy or inhibit the growth of microorganisms.
- Monitor the trend in temperature and white blood cell counts. A fever and leukocytosis suggest that an infection is developing.
- Allow the client to shower after the sutures and drains are removed. Hygiene reduces the number of microorganisms on the skin.

7- Risk for Ineffective Tissue Perfusion (lymphedema) related to compromised flow of lymphatic fluid

- Do not take blood pressures, give injections, administer IV infusions, or have blood drawn from the arm on the side of the mastectomy. Procedures that affect the circulation in the affected arm can contribute to ineffective tissue perfusion.
- Support and elevate the arm on the side of the mastectomy with pillows so it is kept higher than the heart. Elevation promotes gravity drainage of fluid trapped in the soft tissue.
- Place the arm in a sling when the client ambulates initially; eventually the arm can be positioned at the client's side. A sling prevents stasis of fluid in distal areas of the arm.
- Show the client how to squeeze and release a soft rubber ball or a rolled pair of cotton socks several times a day. Venous blood and lymph circulate with contraction of skeletal muscles.
- Remove and reapply an elastic roller bandage from the fingers to the axilla twice a day, or insert the affected arm into a pneumatic sleeve, an air-filled device that mechanically pumps the arm, for a half hour or the prescribed amount of time twice a day. An elastic roller bandage or pneumatic sleeve compresses the valves in veins to promote circulation.
- Assess the hand for swelling, dusky color, delayed nail blanching, coldness, and tingling and report abnormal findings. The nurse is responsible for reporting abnormal findings to reduce the potential for complications.

8- Impaired Physical Mobility related to alteration in pectoral chest muscles

- Start active exercises of the affected arm on the first or second postoperative day, or later if the physician indicates a need to postpone them (skin grafts may need additional time to heal). Active exercise reduces the potential for contractures.
- Begin with flexing and extending the fingers, wrist, and elbow. Later, encourage the client to use the affected arm to perform oral hygiene, hair combing, and face washing. Exercise gradually restores the ability to flex, extend, and abduct the arm.
- Show the client how to face and “finger-walk” up a wall in the room (see Client and Family Teaching 54-1). Mark the client’s progress with masking tape so that the height can be exceeded with subsequent efforts. Finger-walking increases the ability to raise the arm. Marking progress provides an incentive to meet or exceed heights during previous exercises.
- Loop a rope or cord around a shower rod and raise and lower each arm in pulley fashion. Modification in the technique for performing arm exercises facilitates rehabilitation.
- Tie a string or rope to a doorknob and have the client turn the rope in a circular fashion. Turning a rope promotes circumduction.

9- Risk for Injury related to change in center of gravity secondary to extensive removal of chest tissue

- Assist the client during periods of ambulation. The nurse supports the client when or if client loses balance.
- Walk on the client’s unaffected side. The client is more likely to drift toward the side of the body that is heavier.
- Instruct the client to keep the shoulders level and the muscles relaxed when walking. Clients tend to accommodate for the change in the center of gravity by leaning to the side.

10-Risk for Dysfunctional Grieving related to loss of breast

- Avoid trying to diminish the significance of the loss. Grief work involves dealing with the reality of a significant loss.
- Acknowledge client’s grief and reinforce that feeling angry or sad is normal and expected. Validating client’s feelings gives permission for him or her to experience true emotions.
- Stay with client and ensure privacy during emotional periods. The nurse’s presence provides support. Ensuring privacy demonstrates respect for the client’s dignity.

- Avoid administering prescribed sedatives or tranquilizers as a substitute for spending time with the client. Numbing the mind interferes with grieving.
- Encourage sharing with those who can be empathic, such as another breast cancer survivor. Sharing the significance of a loss with a person who has survived a similar experience provides a bond for healing.

11-Risk for Disturbed Body Image, Ineffective Coping, and Sexual Dysfunction related to perceived loss of physical attractiveness and sexual desirability

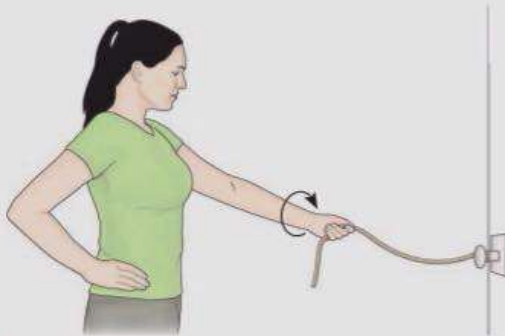
- Suggest that client pad a bra with one or two cotton socks until a prosthesis is fitted in 6 to 8 weeks. Padding a bra gives the outward appearance that the client has both breasts. Purchasing a prosthetic bra is delayed until the tissue heals.
- Inform client that cosmetic breast reconstruction is an option to discuss with the surgeon. Cosmetic breast reconstruction provides an alternative for simulating natural breast tissue.
- Advocate that client and sexual partner openly express to each other how the surgery has affected them emotionally. Open communication facilitates mutual understanding and acceptance of body change.
- Discuss methods for dealing with the removed breast during sexual activities such as using no or low lighting during intercourse or wearing the upper portion of lingerie. Modifying sexual activities reduces self-consciousness.



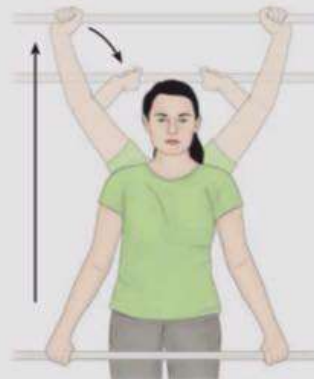
Client and Family Teaching 54-1 Performing Arm Exercises Following Surgery for Breast Cancer



1. **Wall handclimbing.** Stand facing the wall with feet apart and toes as close to the wall as possible. With elbows slightly bent, place the palms of the hand on the wall at shoulder level. By flexing the fingers, work the hands up the wall until arms are fully extended. Then reverse the process, working the hands down to the starting point.



2. **Rope turning.** Tie a light rope to a doorknob. Stand facing the door. Take the free end of the rope in the hand on the side of the surgery. Place the other hand on the hip. With the rope-holding arm extended and held away from the body (nearly parallel with the floor), turn the rope, making as wide swings as possible. Begin slowly at first; speed up later.



3. **Rod or broomstick lifting.** Grasp a rod with both hands, held about 2 feet apart. Keeping the arms straight, raise the rod over the head. Bend elbows to lower the rod behind the head. Reverse maneuver, raising the rod above the head, then return to the starting position.



4. **Pulley tugging.** Toss a light rope over a shower curtain rod or doorway curtain rod. Stand as nearly under the rope as possible. Grasp an end in each hand. Extend the arms straight and away from the body. Pull the left arm up by tugging down with the right arm, then the right arm up and the left down in a see-sawing motion.

