Body Mechanics, Positioning & Moving

Learning Objectives

On completion of this chapter, the reader will

- Identify characteristics of good posture in a standing, sitting, or lying position.
- Describe three principles of correct body mechanics.
- Explain the purpose of ergonomics.
- Give at least two examples of ergonomic recommendations in the workplace.
- Describe at least 10 signs or symptoms associated with the disuse syndrome.
- Describe six common client positions.
- Explain the purpose of five different positioning devices used for safety and comfort.
- Name one advantage for each of three different pressure-relieving devices.
- Discuss four types of transfer devices.
- Give at least five general guidelines that apply to transferring clients.

Inactivity leads to deterioration of health & cause multiple complications among people with limited activity & movement. The consequence of inactivity is (**disuse syndrome**) (inactivity's signs & symptoms). Disuse syndrome reduced with positioning & moving.

Dangers Of Inactivity	
Systems	**Effects**
Muscular	Weakness; Decreased tone/strength; ↓ size (atrophy)
Skeletal	Poor posture; Contractures; Foot drop
Cardiovascular	Impaired circulation; Thrombus (clot) formation Dependent edema
Respiratory	Pooling of secretions; Shallow respirations Atelectasis (collapsed alveoli)
Urinary	Oliguria (scanty urine); Urinary tract infections Calculi (stone) formation;
Gastrointestinal	Anorexia; Constipation; Fecal impaction
Integumentary	Pressure sores
Endocrine	Metabolic rate and hormonal secretions are decreased
Central nervous	Sleep pattern disturbances; Psychosocial changes

MAINTAINING GOOD POSTURE

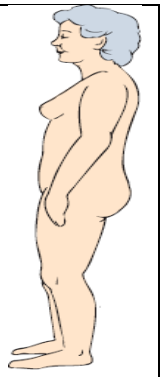
Posture (position of the body) affects a ***person's appearance, stamina, & ability to use musculoskeletal system efficiently***. **Good posture** (standing, sitting or lying position) ***distributes gravity through*** the body center over a wide base of support. Good posture is important for clients & nurses. Performs work using poor posture lead to **muscle spasms** (sudden, forceful, involuntary muscle contractions).

BASIC TERMINOLOGY	
TERM	**DEFINITION AND EXAMPLE**
Gravity	Force that pulls objects toward the earth's center. The pull of gravity causes objects to fall to the ground.

Energy	Capacity to do work. Energy is used to move the body from place to place. Energy is required to overcome the gravity force.
Balance	Steady position with weight. A person falls when off balance.
Center of gravity	Point at which the mass of an object is centered. The center of gravity for a standing person is the pelvis center and about halfway between the umbilicus and the pubic bone.
Line of gravity	Imaginary vertical line that passes through the center of gravity. The line of gravity in a standing person is a straight line from the head to the feet through the center of the body.
Base of support	Area on which an object rests. The feet are the base of support when a person is in a standing position.
Alignment	Parts of an object being in proper relationship to one another. The body is in good alignment in a position of good posture.a
Neutral position	The position of a limb that is turned neither toward nor away from the body's midline.
Anatomic position	Frontal and back views with arms at the sides and palms forward.
Functional position	Position in which an activity is performed properly and normally. In the hand, the **wrists** are slightly dorsiflexed between 20-35 degrees and the **proximal finger joints** are flexed between 45 and 60 degrees, with the **thumb** in opposition and alignment with the pads of the fingers.

Standing To maintain good posture in a standing position:

- Keep feet ***parallel***, at ***right angles*** to lower legs & about (**10-20 cm)** apart.
- ***Distribute weight equally on both feet*** to provide a broad base of support.
- ***Bend the knees slightly*** to avoid straining the joints.
- Maintain the hips at an even level.
- Pull in ***buttocks*** & hold ***abdomen up*** & ***in*** to keep spine properly aligned.
- Chest up & slightly forward & extend waist to give space to internal organs
- Keep the shoulders even and centered above the hips.
- Hold the ***head erect*** with the ***face forward*** and the ***chin slightly tucked***.



Sitting

Buttocks & ***upper thighs*** become ***base of support***. Both ***feet rest on floor***, ***knees*** are ***bent*** with posterior of knee ***free from*** chair ***edge*** to avoid interfering with distal circulation.

Lying Down

Good posture in a lying position looks the same as a standing position, except the person is horizontal. **Head & neck** muscles are in a neutral position, centered between the shoulders. **Shoulders** are level, whereas **arms**, **hips**, and **knees** are slightly flexed with no

compression of the arms or legs under the body. The **trunk** is straight and the **hips** are level. The **legs** are parallel to each other with **feet** at right angles to the leg.

BODY MECHANICS

The use of proper **body mechanics** (efficient use of musculoskeletal system) **increases muscle effectiveness**, **reduces fatigue**, and helps to **avoid repetitive strain injuries** (disorders that result from cumulative trauma to musculoskeletal structures). Basic principles of body mechanics are important regardless of a person's occupation or daily activities. To avoid injury, nurses must use proper body mechanics when ***lifting***, ***turning***, and ***positioning clients***.

ERGONOMICS

Using proper body mechanics is one component of preserving the integrity of the body. The other component is applying and implementing **ergonomics** (field of engineering science devoted to promoting comfort, performance & health in workplace). **Ergonomics** is used to improve the ***design of work environment*** & ***equipment***.

Ergonomic recommendations include the following:

- Use ***assistive devices to lift or transport*** heavy items or clients.
- Use ***alternative equipment*** for ***tasks that require repetitive motions***—for instance, headsets or automatic staplers.
- Position equipment no more than ***20°-30° away about an arm's length***—to avoid reaching or twisting the trunk or neck.
- ***Use a chair with good back support***. A chair should be high enough so the user can place his/her feet firmly on floor. There should be **two fingers** between ***edge of the seat*** and ***back of the knees***. Arm rests should allow a relaxed shoulder position.
- Keep ***elbows flexed 100° - 110°***, or use wrist rests to keep wrists in neutral position.
- Work under ***nonglare lighting***.

Using Good Body Mechanics	
Action	***Rational***
Use the longest and strongest muscles of the arms and legs.	*Use of these muscles provides the greatest strength and potential for performing work.*
■ When lifting a heavy load, center it over the feet.	*Such positioning creates a base of support.*
■ Hold objects close to the body.	*Doing so increases balance.*
■ Bend the knees.	*Bending the knees prepares the spine to accept the weight of the load.*
■ Contract the abdominal muscles and make a long midriff.	*Protects the muscles of abdomen & pelvis & prevents abdominal wall. strain & injury*
■ Push, pull, or roll objects whenever	*Lifting requires more effort.*

possible rather than lifting them.	
■ Use body weight as a lever to assist with pushing or pulling an object.	*This reduces muscle strain.*
■ Keep feet apart for a broad base of support.	*This stance lowers the center of gravity, which promotes stability.*
■ Bend the knees and keep the back straight when lifting an object, rather than bending over from the waist with straight knees.	*This stance makes best use of the longest and strongest body muscles and improves balance by keeping the weight of the object close to the center of gravity.*
■ Avoid twisting and stretching muscles during work.	*Twisting can strain muscles because the line of gravity is outside the body's base of support.*
■ Rest between periods of exertion.	*Resting promotes work endurance.*

POSITIONING CLIENTS

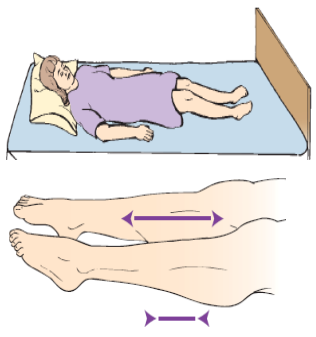
Good posture and body mechanics and ergonomically designed features are especially helpful when inactive clients require positioning and moving. **An inactive client's** position is ***changed to relieve pressure on bony areas*** & to promote **functional mobility** (alignment that maintains the potential for movement & ambulation).

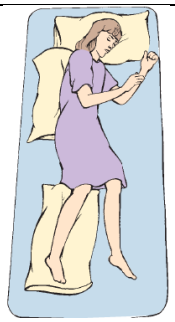
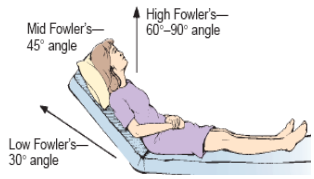
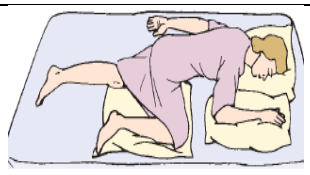
General principles for positioning are as follows:

- Change position ***at least every 2 hours***.
- ***Enlist help*** if needed.
- Raise the ***bed to an appropriate height***.
- ***Remove pillows*** and ***positioning devices.***
- ***Unfasten drainage tubes from the bed linen.***
- ***Turn the client as a complete unit*** to avoid twisting the spine.
- Place the ***client in good alignment*** with ***joints slightly flexed***.
- ***Replace pillows and positioning devices.***
- ***Support limbs in a functional position.***
- ***Use elevation to relieve swelling*** or promote comfort.
- ***Provide skin care after repositioning.***

Common Positions

Nurses commonly use ***six body positions*** when caring for bedridden clients: supine, lateral, lateral oblique, prone, Sims', and Fowler's.

Supine Position ▪ The person **lies on the back**. ▪ In supine position prolonged pressure leads to: ✓ Skin breakdown at ***the spine end*** ✓ Potential for **foot drop** (permanent dysfunctional position due to calf muscles shortening & lengthening of opposing muscles on the anterior leg.	

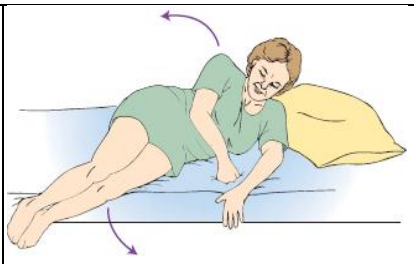
✓ Foot drop hinders ambulation (interferes person's ability to place heel on the floor). ▪ Supine position is recommended to ***reduce the incidence of sudden infant death syndrome*** among newborns.	
Lateral Position ▪ Side-lying position, foot drop is of less concern. ▪ Unless the upper ***shoulder & arm*** are supported, they may ***rotate forward*** and ***interfere with breathing***.	
Lateral Oblique Position ▪ variation of the sidelying position, ▪ Client lies on side; top leg placed in 30° of hip flexion & 35° of knee flexion. ▪ The calf of top leg is placed behind the body midline on a support as a pillow. ▪ Back is supported & bottom leg is in neutral position. ▪ ***Produces less pressure on hip*** than lateral position.	
Prone Position ▪ The client lies on the abdomen ▪ ***Alternative position*** for person with ***pressure ulcers***. ▪ ***Provides good drainage*** from bronchioles, stretches trunk, extremities & keeps hips in extended position. ▪ ***Improves arterial O_2*** in mechanically ventilated clients ▪ Poses challenge for client's assessment & communication ▪ Uncomfortable in ***recent abdominal surgery/back pain***.	
Fowler's Position (semi-sitting position) ▪ **M**akes it easier for client to eat, talk, and look around. ▪ Three variations are common. In a ***low Fowler's***: head and torso are elevated to **30°.** A ***mid-Fowler's or semi-Fowler's***: elevation of up to 45°. A ***high Fowler's*** is an elevation of **60°-90°**. The **knees** may not be elevated but doing so relieves strain on the lower spine. ▪ It is helpful for clients with **dyspnea**. ▪ Allows the exchange of a greater volume of air. ▪ **Prolonged sitting** decreases blood flow to coccyx area tissues & increases risk of pressure ulcers.	
Sims' Position (Semiprone position) ▪ Client lies on left side; right knee drawn up toward chest. ▪ The **left arm** is positioned along the client's back, and the ***chest and abdomen*** are allowed to ***lean forward***. ▪ Used for examination & procedures of rectum & vagina.	

Give one advantage and one disadvantage for the supine, lateral and lateral oblique, prone, Sims' and Fowler's positions.

Positioning Devices

Many devices are available to help maintain good body alignment in bed and prevent discomfort or pressure. Any position, no matter how comfortable or anatomically correct, must be changed frequently.

Adjustable Bed

▪ It can be raised or lowered and allows the position of the head and knees to be changed. ▪ **<u>High position</u>** makes nursing care easier. ▪ Also client looks around without twisting & bending. ▪ It ***promotes drainage*** of upper lobes of lungs and prepares client for ***standing*** and ***walking***. ▪ **<u>The low position</u>** enables an independent client to get in and out of bed safely.	

Mattress

A **comfortable, supportive mattress** is firm but flexible enough to permit good body alignment. A **nonsupportive** mattress promotes an ***unnatural curvature of the spine***.

Bed Board B**ed board** (rigid structure placed under mattress) provides ***additional skeletal support.*** They are made of ***plywood*** or ***firm material***. If bed sections (head & foot) can be raised, board must be divided into hinged sections.	

Pillows

Pillows are used to **support** and **elevate** a body part. **Small pillows**, as ***contour pillows***, ***triangular wedges*** & ***bolsters*** ideal to support & elevat head, extremities & shoulders.

Turning Sheet

A turning sheet extends from **upper back** to **mid-thighs** is a helpful positioning device. It ***prevents friction*** when moving, lifting & turning the client from side to side. Nurses create a turning sheet by ***folding a flat sheet*** in **quarters** and placing it under the client. They ***roll the sheet close to the sides of the client's body*** during repositioning. Working as a team, nurses use the sheet to ***slide*** and ***roll*** the client to an **alternate position**. They take care to keep the sheet dry and free of wrinkles to prevent skin breakdown.

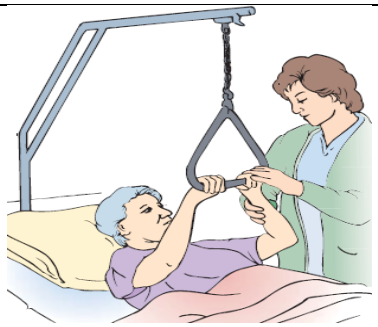
Trochanter Rolls

Using a Trochanter Roll	
Action	***Rational***

■ Fold a sheet lengthwise in half or in thirds and place it under the client's hips.	*The sheet will anchor the body in correct position.*
■ Place a rolled-up bath blanket or two bath towels under each end of the sheet that extends on either side of the client.	*This provides support to the trochanters.*
■ Roll the sheet around the blanket so that the end of the roll is underneath.	*This action prevents unrolling.*
■ Secure the rolls next to each hip and thigh.	*The rolls prevent external rotation of the hip.*
■ Permit the leg to rest against the trochanter roll.	*This position allows normal alignment of the hips, preventing internal or external rotation.*

Trapeze

- A trapeze is a **triangular piece of metal hung** by a chain over the head of the bed.
- The client **grasps the trapeze** to ***lift the body*** and move about in bed.
- A trapeze is an excellent device for helping a **bedridden** client to increase his or her activity.



Hand Rolls

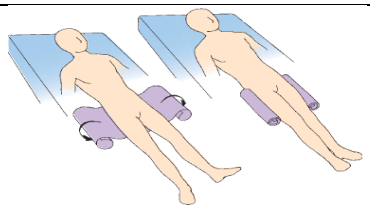
- Hand rolls are devices that preserve client's functional ability to grasp and pick up objects.
- It prevents **contractures** of the fingers.
- Keep thumb positioned slightly away from the hand and at a moderate angle to the fingers.
- Keep fingers in neutral position rather than a tight fist.
- A rolled-up washcloth or a ball can be used as an alternative to commercial hand rolls.
- Removed regularly to facilitate movement & exercise.



Foot Boards, Boots, and Foot Splints

- Foot boards, boots & splints are devices that **prevent foot drop** by keeping feet in a functional position.
- ***Prevent outward rotation*** of foot & lower leg.
- Foot splint is used for the short client.
- Wear ankle-high tennis shoes to prevent foot drop.
- Use pillow if foot splint or foot board is not available.
- A pillow support does not provide the firmness of a board or splint, & nurse replaces it as soon as possible.



Trochanter rolls prevent legs from ***turning outward***. Placing a positioning device at the trochanters helps to ***prevent leg from rotating outward.***	

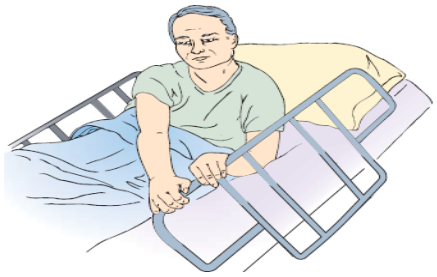
Turning and Moving Clients

Clients who cannot change from one position to another independently and those who need help doing so **need nursing assistance**. Good turning and moving skills are important to prevent injury to the nurse and the client, who may weigh more than the nurse.

PROTECTIVE DEVICES

Items such as **siderails**, **mattress overlays**, **cradles**, and **specialty beds** protect inactive clients from harm or complications.

Siderails

▪ Siderails aid clients in changing their position and moving about while in bed. ▪ Client can safely turn from side to side & sit up in bed. ▪ These activities help clients to maintain or regain muscle strength and joint flexibility.	

Mattress Overlays

Mattress overlays are accessory items made of foam or containing gel, air, or water that nurses place over a standard hospital mattress. Nurses use mattress overlays to reduce pressure and restore skin integrity.

Foam and Gel Mattresses

It ***acts like subcutaneous tissue layer*** & ***like cushion***.

It ***redistributes pressure*** over greater area, ***reduces compressive effect*** on skin & tissue.

Channels & ***cells filled with air*** allow ***evaporation of moisture*** & ***escape of heat.***

Egg-crate provides minimal pressure reduction and is recommended for comfort only.

Thicker, waffle-shaped offer greater pressure reduction; to prevent skin breakdown.

Gel is alternative used to fill cushions & mattresses. It **suspends & supports** body part.

Nurses place **gel** and **foam cushions** in **wheelchairs** to prevent the **"hammock effect"** the posterior and lateral compression that occurs when sitting in a slinglike seat.

Static Air Mattress

A static air pressure mattress is **filled with a fixed volume of air**. It suspends the client on a buoyant surface, ***distributing the pressure*** on the underlying tissue. If the mattress becomes ***underinflated***; it ***loses its effectiveness*** as a pressure-relieving device. Because plastic is

nonabsorbent, air mattresses ***permit less evaporation*** of moisture than foam. Also ***sharp objects can damage the integrity of the mattress***.

Alternating Air Mattress

An alternating air mattress is ***similar to a static*** one with one **exception**: ***every other channel inflates*** as the ***next one deflates***. The process is then reversed. The ***wavelike redistribution of air cyclically*** relieves pressure over bony prominences. This repetitive process ***promotes blood flow*** and keeps the tissue ***supplied with oxygen***. The **tubing** connecting the mattress to its motor-driven compressor ***must not become kinked***. The ***noise may disturb some clients***.

Water Mattress

A water mattress ***supports body*** & ***equalizes pressure /square inch*** over its surface. The **pressure-relieving** effect is maintained regardless of any shift in the client's position. Sleeping on waterbed produces a feeling of tranquility may provide emotional effects. Water mattresses are **heavy**; the ***floor*** & ***bed frame*** must be able to support weight. ***Puncturing leads to damage***. **Filling** and **emptying** are **time-consuming**.

Cradle

A cradle is a **metal frame secured to or placed on top of the mattress**. It forms a ***shell over the client's lower legs*** to ***keep bed linen off the feet or legs***. A cradle is often ***used for clients with burns***, ***painful joint disease***, and ***fractures of the leg.***

Specialty Beds

Specialty beds such as ***low-air-loss beds***, ***air-fluidized beds***, ***oscillating support beds***, and ***circular beds*** offer more functions than standard hospital beds. They are ***used to relieve pressure*** & to ***prevent other problems*** associated with inactivity & immobility.

Pressure-Relieving Devices		
Device	**Examples**	**Indications For Use**
Foam mattress or gel cushion	Egg crate Geo-Matt Spencegel pad	Intact skin and minimal risk for breakdown Changes in position occur spontaneously or require minimal assistance.
Static air, alternating air, or water mattress	TENDER Cloud Sof-Care Pulsair Lotus	At some risk for skin breakdown, or A superficial or single deep break in skin but pressure easily relieved Need for prolonged bed rest with immobilization
Oscillating support bed	Roto Rest Tilt and Turn	At high risk for systemic effects of immobility, such as pneumonia and skin breakdown
Low–air-loss bed	KinAir FLEXICAIR Mediscus	Impaired skin Existence of risk factors for further skin breakdown Alternative positions limited, less than adequate, or impossible Assistance required for frequent transfers from bed
Air-fluidized bed	CLINITRON	**Combination of the following:**

	FluidAir	Impaired skin Continued existence of risk factors for further skin breakdown Alternative positions limited, less than adequate, Seldom transferred from bed
Circular bed	CircOlectric	Current or high risk for skin breakdown because of multiple trauma, if it involves head, neck, or spine Burns require frequent dressing change or topical applications

TRANSFERRING CLIENTS

- **Transfer** (moving client from place to place) refers to ***moving a client from bed*** to ***chair*** or ***stretcher*** & ***back to bed*** again. The client **assists in *active* transfer**.
- A transfer done entirely by others or by mechanical means is a **passive transfer.**

Transfer Devices

Several devices are available to help transfer clients. The use of a ***transfer handle***, ***transfer belt***, ***transfer board***, or ***mechanical lift*** helps to decrease the potential for injuries to the client and nurse. Transfer devices are especially helpful when caring for clients who fear falling or lack confidence in the ability of personnel to transfer them safely and comfortably.

Transfer Handle

- Some clients with ***disabilities*** find that transfer handle helps them **to remain active and independent**.
- It ***fits between mattress*** and ***bed frame or box spring*** and serves as a combination ***grab bar*** and ***handrail*** to support client's weight while exiting & returning to bed
- With transfer handle; the client is free to move about. It ***promotes activity*** and ***mobility*** for many who are physically challenged.

Transfer Belt

- A transfer belt is a padded device **secured around the client's waist**.
- It handles provide a means of gripping and supporting client. This device is ***designed for clients*** who can ***bear weight*** and help with transfer.
- It also may be ***used as a walking belt*** to provide safety and security while assisting a client with ambulation

Transfer Board

A transfer board serves as a ***supportive bridge between two surfaces*** as the bed and a wheelchair or a wheelchair and a car seat. **The low-friction board**, which is about ***30 inches long and 8 inches wide***, is positioned so that the client's buttocks can slide across what would otherwise be an open space or a gap in height between two surfaces. Some clients with strong arm and upper body muscles can use a transfer board independently. For clients who need assistance, the nurse uses a transfer belt in conjunction with a transfer board. **Full-body transfer** boards also are available for ***moving supine clients to a stretcher or x-ray table***.

Mechanical Lift

A mechanical lift (helps to ***move heavy clients*** or those with ***limited ability*** to assist **from the bed** to a ***chair***, ***toilet***, or ***tub***, and ***back again***. Both electric and hydraulic models are available with a lifting ***capacity of 350 to 600 lbs***. The wheels are locked when a stationary position is desired such as when lowering a client into place.

Client Transfer

If the client cannot assist with a transfer and no transfer device is available, two people can lift the client from bed into a chair. This method is the least desirable, however, because of the risk of client or nurse injury.

List the various methods for transferring clients in a sequence from least likely to cause injury to the nurse to greatest potential to cause injury.

NURSING IMPLICATIONS

During the initial and subsequent client assessments, the nurse determines the client's level of dependence on nursing assistance. The nurse selects positioning, transfer, and protective devices according to whether the client is independent or requires partial or total assistance. Various nursing diagnoses may apply to inactive clients.

- ☒ Impaired Physical Mobility
- ☒ Risk for Injury
- ☒ Impaired Bed Mobility
- ☒ Risk for Disuse Syndrome
- ☒ Risk for Impaired Skin Integrity
- ☒ Risk for Perioperative-Positioning Injury
- ☒ Impaired Transfer Ability

Maintaining Proper Body Alignment

Introduction

Mobility is regulated by coordinated effort of the musculoskeletal and neurological systems. The major functions of the musculoskeletal system are to maintain body alignment and to facilitate mobility. Proper body alignment, promote comfort and prevent bone, joint, muscular, skin, neural, lymphatic, circulatory, or tissue damage.

Time Allowed: 5-10 minutes

Practical skills outcomes: at the end of the procedure the student will be able to Maintain Proper Body Alignment

Definitions & terminology:

- Mobility refers to the ability to engage in activity and free movement which includes walking, running, sitting, standing, lifting, pushing, pulling, and performing activities of daily living (ADLs).
- Body alignment refers to the position of body parts in relation to each other.
- The line of gravity (vertical line passing through center of gravity) is shown in.
- Base of support is the foundation on which a person or object rests. Stability of one's balance is promoted by a steady base of support and a low center of gravity.
- Anatomic position: Frontal & back views with arms at sides and palms forward.
- Functional position: Position in which an activity is performed properly and normally. In the hand, the wrists are slightly dorsiflexed between 20 - 35 degrees & proximal finger joints are flexed between 45 and 60 degrees, with the thumb in opposition and alignment with the pads of the fingers.

Indications

- To provide the patient with proper body alignment
- To promote comfort
- To prevent bone, joint, muscular, skin, neural, circulatory, or tissue damage.

Safety precautions

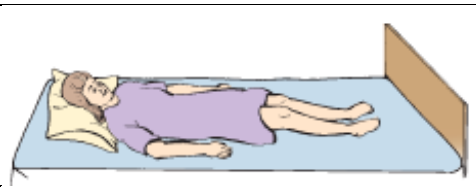
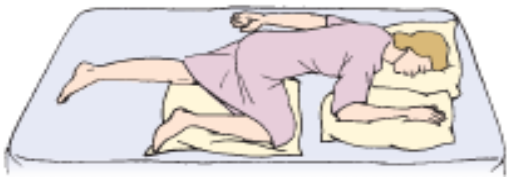
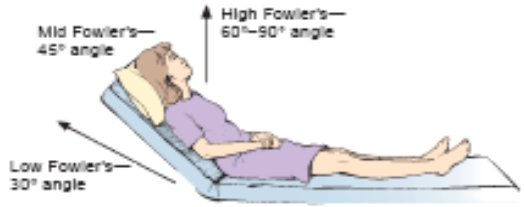
- Determine presence of IV equipment, wounds, drains, or mechanical equipment.
- Frequent repositioning, will vary with each patient and situation.
- Repositioning will require a complete and thorough assessment of the patient to optimize patient comfort and proper alignment.

Quality control

- Before beginning, assess skin surfaces for signs of pressure areas, such as blanched or reddened areas.
- Assess patient's diet (high protein, high calorie, diabetic, cardiac)
- Provide intellectual stimulation. Suggest receiving visitors; working crossword puzzles; reading newspapers, books, magazines; and playing computer games.

- Elderly and Physically ill Patients will require more time for communication and understanding of positioning techniques.
- Provide more time for moving and exercising activities.
- Pediatric Patient; involve parents in procedure and mobility activities to reduce anxiety and enhance cooperation of children.
- Determine need for extra pillows, covers and level & bed position.

Common Positions

Supine position: In the supine position, the person lies on the back .	
Lateral position: (side-lying position.	
Prone position: (one in which the client lies on the abdomen.	
Sims' position: (semiprone position), the client lies on the left side with the right knee drawn up toward the chest.	
Fowler's position: (semi-sitting position) makes it easier for the client to eat, talk, and look around. Three variations are common.	
Lateral oblique position: (a variation of the sidelying position), the client lies on the side with the top leg placed in 30° of hip flexion and 35° of knee flexion	

Instruments & materials

▪ Pillows ▪ Blankets ▪ Sheets ▪ Foot-drop stop ▪ Splints ▪ Heel and elbow protectors	▪ Floating mattress ▪ Air or water mattress ▪ Egg crates ▪ Trochanter rolls ▪ Lumbar roll ▪ Chair or positional bed

Procedures (implementation)

Assessment

● Check prescriber's order to ensure that patient can be moved to various positions.
● Determine need to assist the patient to various positions.
● Determine presence of IV equipment, surgical wounds, drains, or mechanical equipment.
● Determine need for extra pillows & covers, bed level & position
● Before beginning, assess skin surfaces for signs of pressure areas, such as blanched or reddened areas.
● Assess patient's diet (high protein, high calorie, diabetic, cardiac)
● Avoid serving foods that cause alkaline ash and residue, such as tomato or grapefruit juices. Encourage an adequate amount of vitamin C foods that acidify patient's urine.
● Monitor patient's urine for sediment.

Relevant nursing diagnoses

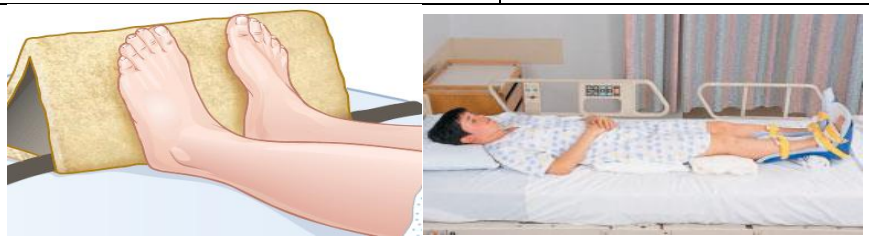
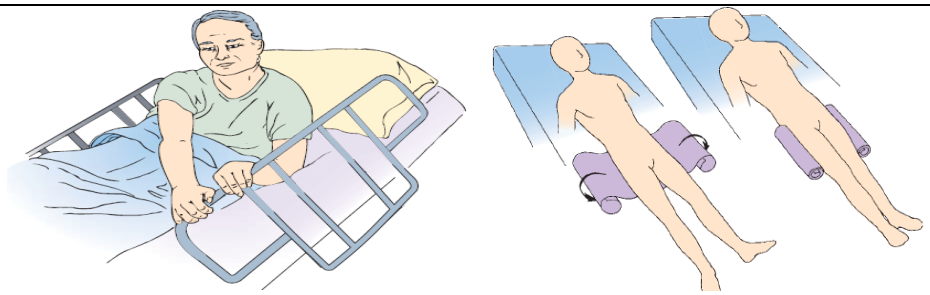
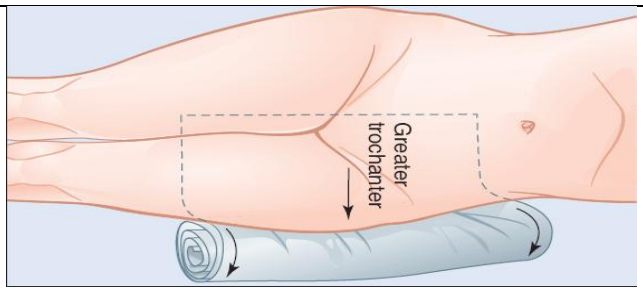
● Impaired physical mobility related to trauma, surgery, or growth deficit
● Pain/discomfort related to inability to cope with body movements & prescribed alignment plan

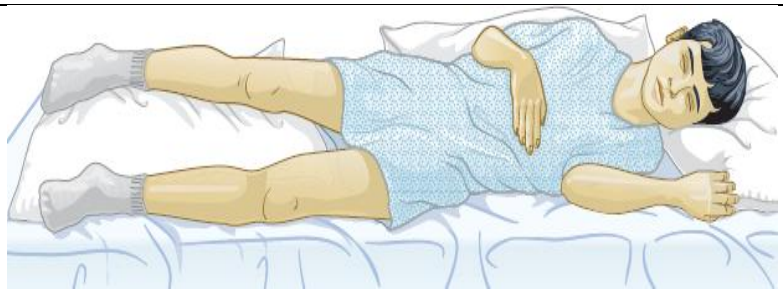
Expected outcomes

- Proper body alignment will be maintained at all times
- Patient will verbalize comfort in prescribed positions
- Patient will experience minimal discomfort in attaining proper body alignment for proper body posture

Implementation

Action	Rational
1. Review prescriber's order.	Determine what is to be done and ability of patient to move.
2. Gather all equipment before moving the patient.	Saves time and allows patient to prepare for movement in/out of bed.
3. Explain procedure and purpose to the patient/caregiver.	Prepare for procedure. ↓ dependency, disorientation & insomnia. ↑ motivation & promote relaxation
4. Don gloves and gown as necessary.	Reduces microrganisms transmission.
5. Assist patient to desired position for proper body alignment (use assistance of another health-care if patient is unable to assist).	Allows the position of comfort with correct alignment for the patient.
6. Use the draw sheet or pull sheet to assist the patient in movement in bed (use assistance of another health-care provider if patient is unable to assist). Another health-care provider may be	Assists in repositioning the patient.

needed to assist the patient to a chair or to stand.	
7. Place pillows, foot-drop stops, splints, trochanter (sheet roll or blanket) between legs, under legs, or behind back as appropriate for comfort and positioning.	Maintains comfortable position with correct patient's alignment. Decreases back pain and/or discomfort. Ensures proper support of joints and muscles
 A footboard is placed at the end of the bed to prevent foot drop.	
	
 Trochanter roll prevents external rotation.	
8. Assess all skin surfaces for pressure signs, such as blanched or reddened areas.	Prevents tissue damage in areas of bony prominences, heavy tissue, or surgical-site areas
9. Gently massage around (never on) pressure areas.	Increases circulation. Prevents venous stasis, thrombus formation, and orthostatic hypotension.
10. Perform complete range of motion at least three times per day.	Maintains or increases muscle tone and prevents muscle atrophy. Prevents contractures; promotes relaxation and enhances flexibility.
11. Turn and position patient frequently according to individual needs. Elevate areas as needed.	Prevents contractures, pressure points, thrombus formation & decubitus ulcers. Prevents backaches & reduces edema



The oblique position.

12. Alternate use of chair, bed, or standing as appropriate for individual patient.	Promotes independence in choices of care. Eliminates the feeling of loss of control and deficient state of wellness.
	Assisting patient to chair using a transfer belt.
13. Provide instructions for and encourage coughing and deep breathing in all positions.	Prevents respiratory secretion pooling & restricting respiratory infections, hypostatic pneumonia, atelectasis, respiratory acidosis and emboli.
14. When positioning is complete, return patient to comfortable position.	Patient comfort.
15. Remove gloves, discard, and wash hands.	Reduces microorganism transmission.

Evaluation

● Assess patient comfort and body alignment position

● Assess for complications such as contractures, decreased muscle tone, muscle atrophy, backaches, or osteoporosis

● Make sure supportive devices are correctly positioned and maintained

● Assess patient's skin for signs of pressure, such as blanched or reddened areas

● Assess respiratory status & circulatory systems for venous stasis, thrombus formation, orthostatic hypotension, pooling of secretions, respiratory infections, atelectasis, respiratory acidosis, or pulmonary emboli

● Assess complications associated with immobility such as anorexia, constipation, renal calculi, urinary retention, or urinary tract infections

Documentation

- Position of patient.
- Patient's response to change.
- Any tissue deviation or damage.

Moving and Positioning the Patient in Bed

Introduction

Proper turning & positioning allows health care provider to make clients as comfortable as possible, prevent contractures and pressure sores, make portions of the client's body available for treatment or procedures, and allows clients greater access to their environment. There are three key concepts to remember when positioning a client: **pressure**, **friction**, and **skin shear**. Always assess the blood flow to skin and tissue areas you are putting under increased pressure when placing a client in a given position. When repositioning a client, be sure the sheets under the client are smooth. This will help prevent increased areas of pressure that could contribute to pressure sores. To prevent skin shear, or friction burn from the sheets, do not drag a client across the bed. Lift the client into proper position or use a turning sheet.

Time Allowed: 10-15 minutes

Practical skills outcomes: at the end of the procedure the student will be able to move and position the patient in bed

Definitions & terminology:

- **Mobility**: the ability to engage in activity & free movement which includes sitting, walking, standing, lifting, pushing, & perform activities of daily living (ADL).
- **Body alignment** refers to the position of body parts in relation to each other.
- **Pressure ulcers**: localized areas of tissue necrosis develop when soft tissue is compressed between bony prominence & external surface for prolonged time.
- **Prone**: one in which the client lies on the abdomen.
- **Supine**: the person lies on the back
- **Posture** (position of the body, or the way in which it is held)
- **A trapeze** is a triangular piece of metal hung by a chain over the head of the bed

Indications

▪ Positions client for a variety of clinical procedures	▪ Maintains body alignment
▪ Promotes optimal lung expansion	▪ Promotes comfort
▪ Maintains skin integrity (facilitates pressure distribution, prevents friction and shear on tissue)	
▪ Prevents injury to and deformities of the musculoskeletal system	

Safety precautions

- Frequent repositioning, but this will vary with each patient and situation.
- Repositioning will require a complete and thorough assessment of the patient to optimize patient comfort and proper alignment.
- Be sure that IV and/or drainage tubing is positioned to prevent tension or tangling during procedure.

- If patient is in isolation or if there is presence of body fluids or wet bed/clothing, wear gloves, gown, and any other personal protective equipment as indicated.
- Elderly often have fragile skin; be careful not to drag the patient across the sheets, because it could cause skin sheering or tearing.

Quality control

- If client is assessed as a candidate for skin care precautions, post a turning schedule for the client in an easy-to-locate area in the client's room.
- Have all equipment necessary for positioning readily available in client's room.
- Regularly check all splints & other devices status to make sure they fit properly.
- Safe, proper body alignment for the nurse includes back aligned and straight, knees bent, and a wide base with feet apart.
- Have client assist as much as possible to reduce the risk of injury for caregiver.

Pressure Sore Concerns

Side-lying position	Prone position	Supine position
▪ Base of 5th metatarsal ▪ Lateral malleolus ▪ Fibular head ▪ Greater trochanter ▪ Iliac crest ▪ Greater tubercle ▪ Lateral epicondyle ▪ Ear and side of face & scalp	▪ Distal phalanges & metatarsals ▪ Knee ▪ Anterior superior and inferior iliac spines ▪ Xiphoid process ▪ Sternum ▪ Ear and side of face and scalp	▪ Calcaneus ▪ Coccyx ▪ Sacrum ▪ Posterior inferior & superior iliac spines ▪ Spinous processes ▪ Ribs ▪ Scapula & Occiput

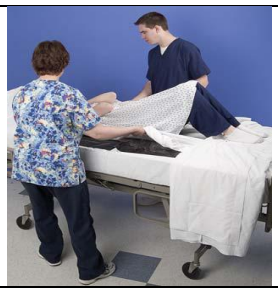
Instruments & materials

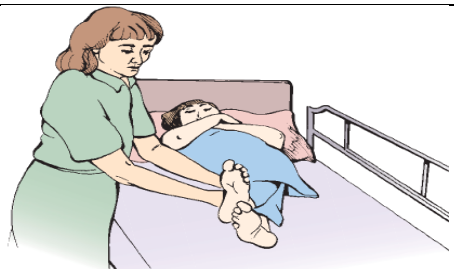
▪ Pillows ▪ Rolled blankets or towels	▪ Heel protectors ▪ Hand rolls

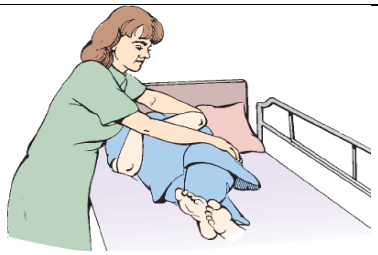
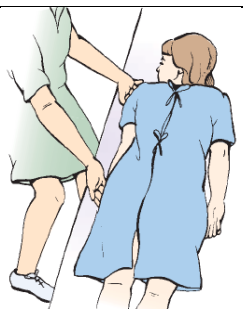
Procedures (implementation)

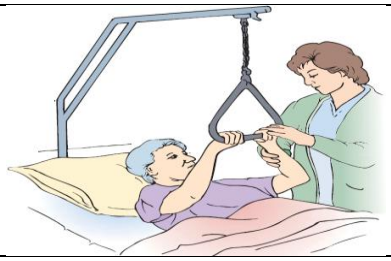
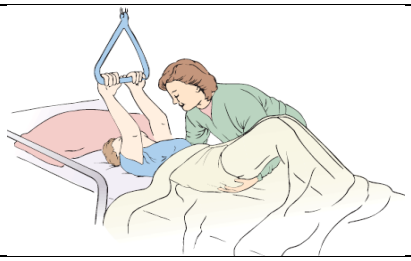
Assessment
1. Assess the client's ability to move independently. 2. Assess the client's flexibility. If clients have contractures or other flexibility limitations, their positions may need to be modified to allow for the restrictions. 3. Assess client's age, medical diagnosis, cognitive status, skin integrity, nutritional status, continence, altered sensation, as well as the overall condition of the musculoskeletal system. 4. Assess the physician's or qualified practitioner's orders for specific restrictions regarding client positioning to ensure the correct positioning is implemented.
Relevant nursing diagnoses
▪ Pain/discomfort related to inability to cope with movements & prescribed alignment plan ▪ Risk for Impaired Skin Integrity ■ Impaired Physical Mobility ▪ Activity Intolerance

Expected outcomes	
1. The client will maintain skin integrity without skin burns, pressure areas, or pressure ulcers. 2. The client will be comfortable as evidenced by verbal and nonverbal cues.	
Implementation	
Client education needed:	
1. Explain the reason for and importance of frequent turning and positioning. 2. Educate client & caregiver regarding the signs & symptoms of pressure sore development. 3. Teach client & caregiver areas most at risk for skin breakdown & what to do if occur. 4. Teach family to inspect client's skin & how to turn & position client before discharged.	
Action	**Rational**
Moving Patient Up in Bed (One Nurse)	
1. Wash hands and don gloves and any other personal protective equipment, if indicated.	Reduces transmission of microorganisms.
2. Explain procedure to patient and/or caregiver as indicated, and how to assist if able.	Reduces anxiety. ↑ comprehension & cooperation. Promotes autonomy.
3. Raise bed to your thigh level. Place patient on back with head of bed in flat position. Lower side rails on side nearest you. Lock bed wheels.	Lessens strain on nurse's back muscles. Reduces gravity's pull on patient's upper body. Promotes patient safety.
4. Remove pillow and place against the headboard.	Prevents striking patient's head against head of bed.
5. Have patient fold arms across chest.	Prevents injuring the patient's arms during the move.
6. Have patient hold on to overhead trapeze.	Allows patient to assist with move, thus promoting patient's autonomy.
7. Have patient flex knees & feet flat on bed.	Allows patient to assist with move.
8. Stand at an angle to the head of the bed, feet apart, knees bent, & feet toward the head of bed.	Promotes good body mechanics.
9. Place one hand and arm under patient's shoulder, and the other under patient's thigh.	Distributes patient's weight more evenly. Supports shoulder & hip joints.
10. Rock forward toward the head of bed, lifting patient with you while having patient push with his/her legs. Note: have patient pull up holding onto trapeze as you move patient upward in bed.	Allows a smooth motion to lift patient. Assistance from patient reduces strain on nurse's back muscles. Promotes patient autonomy.
11. Replace patient's pillow under head. Elevate head of bed to position tolerated by patient.	Promotes patient comfort. Facilitates activities such as eating and drinking.
12. Repeat steps if necessary until patient is high enough in bed.	Heavy or immobile patients are often not moved far enough in one step.

13. Raise side rails. Lower bed.	Promotes patient safety.
14. Wash hands.	Reduce microorganisms transmission
Moving Patient Up in Bed (Two Nurses)	
15. With two nurses on opposite sides of bed, lower side rails. Lock the wheels on the bed.	Promotes patient safety.
16. Remove pillow and place against headboard.	Prevents striking patient's head against top of bed.
17. Place draw sheet on bed under patient's midsection.	Supports patient's weight and reduces friction during move.
18. Roll or bunch sheet so edges are close to patient's body and grasp firmly next to patient's shoulders and hips.	Provides support under heavy parts of the body and places the nurse's hands close to the weight to be moved.
19. If able to assist, have patient flex knees and place feet flat on bed.	Allows patient to assist with move.
20. Facing head of bed, the nurses stand on either side of the patient's center with knees flexed and feet apart in a broad stance.	Increases stability and provides balance. Promotes good body mechanics.
21. On signal, rock and shift weight from back to front leg, moving patient upward in bed in one smooth motion. If possible, patient can assist with this move by pushing with his or her legs. Repeat the move if necessary.	Provides additional body weight force, reduces force needed to move load and ↓ muscles work during movement. Patient's assistance lessens strain on nurse's back muscles & promotes autonomy.
	
22. After each positioning, realign patient, replace pillows and other positioning aids. Replace bed to safe position; remove gloves and other protective equipment; wash hands.	Promotes patient comfort. Maintains correct body alignment. Reduces transmission of microorganisms.
Turning a Patient in Bed	
23. Position patient near far side of bed in supine position.	Provides room for patient to safely turn to side.
24. Position patient's near arm across chest. Slightly abduct the patient's far shoulder from the side of the body. Place the patient's near ankle	Prevents injury to patient's arm. Facilitates movement during roll.

and foot across the far ankle and foot.	
24. Place your hands on patient's far shoulder and hip and roll patient toward you. If draw sheet is in place, grasp it near patient's shoulder and hip instead.	Maintains proper body alignment. Draw sheet provides continuous support for patient's back and should be used when available.
	
25. Stand opposite patient's center with feet in wide stance and one foot ahead of the other. Tighten abdominal and gluteal muscles, and flex your knees.	Promotes good body mechanics. Wide stance provides a stable base of support. Increases stability and provides balance.
26. Position patient with pillows and other positioning aids; raise side rails; lower bed; remove gloves and other protective equipment; wash hands.	Promotes safety and reduces transmission of microorganisms.
Turning the Client From Supine to Lateral or Prone Position	
27. Wash hands or perform an alcohol-based hand rub when appropriate.	Reduces the transmission of microorganisms
28. Lower the siderail and move the client to one side of the bed.	Provides room when turning
29. Raise the siderail.	Ensures safety
	
30. Move to the other side of the bed and lower the siderail on that side.	Facilitates assistance and ease in working
31. Flex the client's far knee over the near one with the arms across the chest.	Aids in turning and protects the client's arms
	Positioning arms and legs.

32. Spread your feet, flex your knees, and place one foot behind the other.	Provides a broad base of support
33.Place one hand on client's shoulder & one on hip on far side	Facilitates turning
34. Roll the client toward you.	Reduces effort
	Turning the client.
35. Replace pillows behind the back and between the legs and under the upper arm.	Aids in maintaining position and provides comfort
36. Raise the siderails and lower the height of the bed.	Ensures safety
37. Wash hands or perform an alcohol-based hand rub when appropriate.	Reduces the transmission of microorganisms
For a Prone Position	
38. Begin as described for lateral position.	Follows same principles
39. Have the client turn his or her head opposite to the direction for rolling and leave the arms extended at each side.	Prevents pressure on the face and arms during and after repositioning
	Preparing for prone positioning.
40. Shift your hands from the posterior of the shoulder and hip to the anterior as client rolls onto his or her abdomen.	Controls the speed with which the client is repositioned
	Bracing the client during turning.
41. Center the client in bed.	Prevents pressure on arms
42. Arrange pillows.	Provides for comfort and support
43. Raise siderails and lower height of bed.	Ensures safety

44. Wash hands or perform an alcohol-based hand rub when appropriate.	Reduces the transmission of microorganisms
Moving the Mobile Client Up in Bed (One-Nurse Technique)	
46. Wash hands or perform an alcohol-based hand rub when appropriate.	Reduces the transmission of microorganisms
47. Remove pillow from under client's head.	Prevent neck & head strain
48. Place the pillow against the headboard.	Cushions head from headboard contact
49. Instruct the client to bend both knees while keeping feet flat on bed.	Aids in assisting by using the stronger muscles of the legs
50. Place your arm under the client's shoulders and the other under the hips	Facilitates moving the heaviest section of the body
	
51. Bend your hips and knees, and spread your feet.	Provides wide base of support & makes use of stronger muscles in legs
52. Rock toward the head of bed while the client pushes with his or her feet.	Creates momentum to facilitate moving
53. Wash hands or perform an alcohol-based hand rub when appropriate.	Reduces the transmission of microorganisms
Alternative Technique	
54. Wash hands or perform an alcohol-based hand rub when appropriate.	Reduces the transmission of microorganisms
55. Lock arms with the client.	Uses combined strength of client & nurse
56. Bend from hips and knees; spread your feet.	Follows principles of good body mechanics
57. Instruct the client to push with his or her legs while pulling locked arms.	Coordinates momentum and effort to move upward
58. Wash hands or perform an alcohol-based hand rub when appropriate.	Reduces the transmission of microorganisms
Two-Nurse Technique	
59. Wash hands or perform an alcohol-based hand rub when appropriate.	Reduces the transmission of microorganisms
60. Protect headboard with a pillow.	Ensures client safety
61. Stand facing each other on opposite sides of bed between client's hips and shoulders.	Distributes weight equally between nurses
62. Lock hands beneath the client's buttocks and shoulders.	Doubles the muscular strength

63. Bend hips & knees; spread feet; and rock toward head of bed.	Follows principles of body mechanics & provides momentum to facilitate moving
64. Move the client up on reaching a previously agreed signal as count of three.	Promotes coordination of effort
65. Wash hands or use hand antiseptic.	Reduces microorganisms transmission
Using a Turning Sheet	
66. Wash hands or use hand antiseptic.	Reduces microorganisms transmission
67. Stand opposite one another on each side of the bed.	Facilitates distributing the client's weight equally between nurses
68. Roll the turning sheet close to the client.	Acts as a sling to slide the client upward
	Rolling the turning sheet and explaining the procedure to the client.
69. Bend hips and knees; spread feet.	Follow body mechanics principles
	Preparing to lift the client by grasping the sheet with both hands, separating the feet, and bending the knees.
70. Rock back and forth in unison; move the client up in bed on reaching an agreed signal.	Coordinates efforts
	Completing the client move.
71. Wash hands or perform an alcohol-based hand rub when appropriate.	Reduces the transmission of microorganisms

Evaluation

- Safe and proper body alignment and movement were achieved for both client and caregiver.
- The client is comfortable in the new position as evidenced by verbal and nonverbal cues.
- The client's skin and underlying organs and tissues were protected from pressure, friction, and shear.

Documentation

- The client's new position and the time of the position change.

- Note any report or observation of pain, discomfort, or dyspnea.
- Note the findings of your integumentary assessment, including color and integrity of skin and the length of time redness persists over bony prominences.

Performing Correct Lifting Techniques

Introduction

Client care skills often require that nurses have physical strength to provide individuals with the assistance required to remain mobile. Nurses may need to carry, pull, push, or lift clients and/or equipment to accomplish daily care. It is imperative that nurses know and use proper lifting techniques. Body mechanics is the term used when referring to lifting techniques. Correct body mechanics are essential and help to avoid work-related musculoskeletal injuries, diminish excessive strain and fatigue, and minimize the potential for client injury.

Time Allowed: 10 minutes

Practical skills outcomes: at the end of the procedure the student will be able to

Perform Correct Lifting Techniques

Definitions & terminology:

- **Body alignment**: position of body parts in relation to each other.
- **Line of gravity** (vertical line passing through center of gravity).
- **Body mechanics**: Purposeful and coordinated use of body parts and positions during activity.
- **Center of gravity**: Point at which mass of an object is centered. Center of gravity for a standing is pelvis center & about halfway between umbilicus & pubic bone.

Indications

- To prevent stress, fatigue, trauma, and injury
- To promote comfort
- To prevent bone, joint, muscular, skin, or neural damage.

Safety precautions

- Assess client & setting for safety risks before moving, lifting, or transferring the client.
- Older patient may take longer time to perform techniques due to limited mobility.
- Wear shoes with low heels, flexible nonslip soles, and closed backs to promote correct body alignment, facilitate proper body mechanics, and prevent accidents.
- When possible, pull rather than push an object because the elbow flexors are stronger than the extensors.
- Use portable IV poles on stretchers & wheelchairs instead of independent IV poles.

Quality control

- Lock elevator doors before entering & exiting with clients.
- All assistive devices must receive periodic safety checks.
- Be sure the bed is aligned to the same height as the stretcher.

- Keep yourself strong and healthy. Nurses must have physical ability in order to avoid fatigue & injury associated with pushing, pulling, lifting, & carrying clients.
- When doing heavy lifting or moving, use assistive or mechanical devices, or obtain assistance from coworkers; know your limitations & use sound judgment. Check prescriber's order to appraise amount of lifting the patient can perform.
- Determine need to assist the patient in the process of lifting.
- Determine need for any equipment to assist patient in the lifting process, proper body alignment, and correct body mechanics.

Instruments & materials

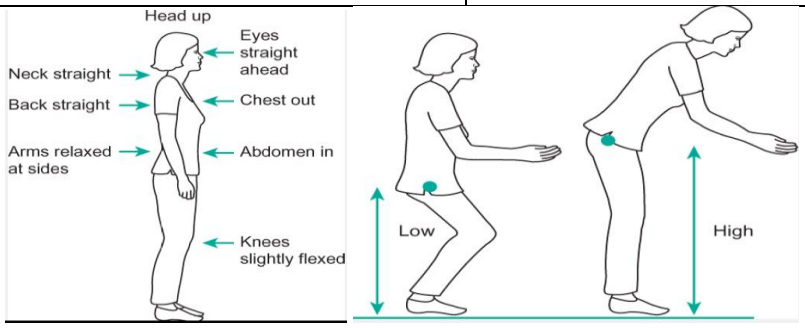
▪ Wheelchair with working locks	■ Transfer board
▪ Draw or lift sheet	■ Nonslip shoes or slippers
▪ Safety or gait belt	■ Stretcher with working locks

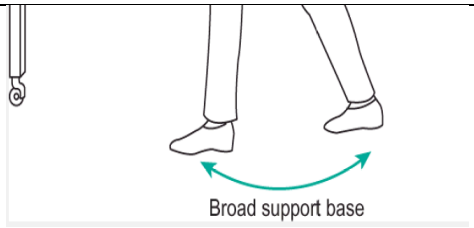
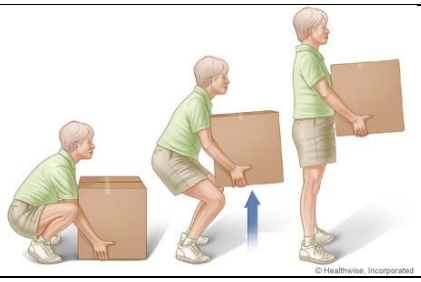
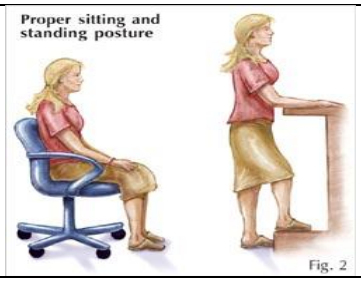




Procedures (implementation)

Assessment
1. Assess the need and degree to which client requires assistance to achieve movement. **2.** Identify the type of physical movement required **3.** Identify the potential need for assistive equipment to accomplish the goal of safe lifting **to minimize the risk of client/nurse injury.** **4.** Identify any unusual risks to safe lifting, as extra heavy client or home care setting. **5.** Explain the steps required to achieve the goal of safe lifting with the client.
Relevant nursing diagnoses
▪ Pain/discomfort related to inability to perform correct lifting techniques due to limited mobility from poor muscle tone ▪ Risk for injury related to improper lifting techniques ▪ Impaired Physical Mobility
Expected outcomes
▪ Position will be comfortable and enhance proper body alignment at all times while performing the lifting process ▪ Patient will experience minimal discomfort in attaining proper posture for lifting ▪ Patient will demonstrate proper lifting techniques in all performances ▪ Patient will express value to his present and future health from utilization of proper body alignment during the lifting process

Client education	
1. Advise clients of the plan to move them from one position to another. **2.** Explain the procedure, provide a demonstration, and describe the individual client's specific participation requirements. **3.** Explain that the ultimate goals of safe lifting and transfers are to encourage independence and to facilitate self-achievement. **4.** If lifting requires equipment use, demonstrate equipment before application occurs. **5.** Reassure client that every effort will be made to maintain individual privacy and dignity and that the body be covered throughout the move and upon completion. **6.** Allay fear of falling, fear of isolation, and potential for the loss of well-being. **7.** Encourage family member participation in order to facilitate safe lifting at sites external to the acute-care setting. **8.** Advise client to inform the nurse immediately if he becomes dizzy or lightheaded. Do not wait and hope that it will go away. **9.** Advise client to inform the nurse if more blankets are needed for warmth while being transported to other parts of the hospital. **10.** Instruct client not to lean forward in wheelchair, it may cause wheelchair to tip.	
Action	**Rational**
1. Review prescriber's order.	Determine ability of patient to lift.
2. Gather all materials/equipment before approaching the patient.	Saves time & allows patient to prepare for learning lifting maneuvers.
3. Wash hands.	Reduce microorganisms transmission
4. Assess the situation for slippery surfaces, including wet floors; slippery shoes on client, helper, or nurse; and towels, linen, or paper on the floor. Resolve the slippery surface prior to lifting the client or object.	Removes the cause of many falls and slips.
5. Maintain low center of gravity by bending at the hips and knees, not the waist. Squat down rather than bend over to lift and lower.	Provides for the equal distribution of body weight and assists in maintaining safe balance.
	
6. Establish a wide support base with feet spread apart.	Provides stability and lowers the center of gravity.

	
7. Use feet to move, not a twisting or bending motion from the waist.	Assists in maintaining correct body alignment, which increases strength to lift, push, pull, and carry.
8. When pushing or pulling, stand near the object and stagger one foot partially ahead of the other.	Provides a safety net for avoiding potential back injuries.
9. When pushing lean into client or object & apply continuous light pressure. When pulling, lean away & grasp with light pressure. Never jerk or twist your body to force weight to move.	Firm pressure will provide continuous movement of the object and will avoid abrupt movements that require the expenditure of increased energy.
10. When stooping to move an object, maintain a wide base of support with feet, flex knees to lower, and maintain straight upper body.	Provides appropriate mechanics for strength & endurance to achieve task & stand up straight upon completion.
11. When lifting or carrying, bend knees in front of object, take a firm hold, and assume a standing position using leg muscle & keeping back straight	Avoid use of back, diminish potential for spinal twisting, and provide lifter with a firm center of gravity & strength to lift required weight.
	
12. When rising up from a squatting position, arch your back slightly. Keep buttocks and abdomen tucked in & rise up with head first.	Keeps the back from bowing and increasing the strain on the back muscles.
13. When lifting or carrying heavy objects, keep weight as close to center of gravity as possible .	Reduces the strain on arm, leg, and back muscles.
 Hold weight close to your center of gravity.	 Keep back straight when reaching.
14. When reaching for a client or an object, keep	Avoids straining the back and arm

the back straight. If the client or object is heavy, do not try to lift client or object without repositioning yourself closer to the weight.	muscles.
15. Use safety aids and equipment. Use gait belts, lifts, draw sheets, & other transfer assistance devices. Encourage clients to use handrails & grab bars. Wheelchair, cart, and stretcher wheels should be locked when they are not actually being moved.	Reduces the strain on the nurse and improves the safety for the client.
Evaluation	
▪ Teach patient about all aspects of lifting ▪ Supportive devices, if needed, are correctly positioned and maintained ▪ Monitor that patient assumes correct body mechanics for each lifting procedure ▪ Assess for injury in the lifting procedure	

Documentation

- Position of patient when lifting.
- Patient's responses to lifting procedures.
- Any injury or damage the patient might experience.

Bed to Stretcher

Introduction

Some clients must remain horizontal when they are moved. If they are not strong enough to sit erect in a wheelchair or there is some injury that prevents them from sitting, clients must be moved while lying flat.

Time Allowed: 5–10 minutes

Practical skills outcomes: At the end of the procedure the student will be able to perform assisting from Bed to Stretcher

Definitions & terminology:

- Stretcher: is a narrow, cart-like bed that rolls on wheels.
- Shearing force: Force exerted against the skin by movement or repositioning.

Indications

- If the patient is not strong enough to sit erect in a wheelchair
- If there is some injury that prevents patient from sitting
- Post operative
- Post accidents
- Orthopedic patients
- Comatosed and unconscious patients
- Suspected or obvious spinal cord injury
- Post spinal anesthesia

Complications

- The most frequent complication in transferring a client is falling.
- Possible hazard is pulling or dislodging indwelling tubes or catheters.
- Sliding across the sheets, side rails, and wheelchair armrest can bruise or injure the client.
- Potential injury and contamination from the floor.

Safety precautions

- Follow the safety guidelines and agency policy regarding safety precautions.
- Rise up side rails or safety straps to prevent accidental falls during transport. The wheels on a stretcher lock to prevent accidental movement during client transfers.

Quality control

- Count to three and have everyone move the client on the count of three.
- Fold client's arms across chest to prevent them from being caught underneath the body.
- Be careful to support the client's head and neck during the transfer.
- Don't allow urinary catheter drain bag to be held above the level of the client's bladder.
- Even though both the stretcher and bed wheels are locked, leaning your body into stretcher will help prevent gaps between the stretcher and bed.

Instruments & materials

Transferring a Client with	**Transferring a Client with Maximum Assistance**

Minimum Assistance • Bed • Stretcher	• Bed • Pillows • Lift sheet	• Stretcher • Transfer/slider boards • Other qualified personnel to assist




Procedures (implementation)

Assessment	
1. Assess the client's current level of mobility. 2. Assess for injury. 3. Assess for any impediments to mobility as a cast, drainage tubes, IVs, or intubation. 4. Assess the client's level of understanding of the procedure. 5. Assess the client's environment. Assess how close the stretcher will move to the bed. Assess the height of the bed. This allows for a safe transfer. 6. Make sure the stretcher is safe to use. Check for working brakes, side rails, safety straps that are intact and usable, and an IV pole attachment if needed. This allows for a safe transfer.	
Diagnosis	
Impaired Physical Mobility Activity Intolerance	
Planning: Expected Outcomes:	
1. The client will be transferred from the bed to the stretcher without pain or injury. 2. Drainage tubes, IVs, or other devices will remain intact. 3. The client's skin will be intact and undamaged.	
Client education needed:	
1. If the client has an injury or condition that requires immobility, explain the need and rationale for immobility to the client. 2. Be sure to remind client that gurney is narrow & to move carefully while on it. Remember that if the client is confused & explanation won't help, safety straps & side rails are needed.	
Action	Rationale
Transferring a Client with Minimum Assistance	
1. Inform client about desired purpose and destination.	Reduces client anxiety and increases cooperation.
2. Raise the height of bed to 1 inch higher than the stretcher and lock brakes of bed.	prevent back strain; prevents bed from moving.
3. Instruct client to move to side of bed close to stretcher. Lower side rails of bed and stretcher. Leave side rails on opposite side up.	Decreases risk of client falling.

Lower side rails of bed and stretcher.	
4. Stand at outer side of stretcher and push it toward bed.	Diminishes the gap between bed and stretcher; secures stretcher position.
5. Instruct client to move onto stretcher with assistance as needed.	Promotes client independence.
6. Cover client with sheet or bath blanket.	Promotes comfort; protects privacy.
7. Elevate stretcher side rails & secure safety belts about client. Release brakes of stretcher.	Prevents falls.
8. Stand at head of stretcher to guide it when pushing.	Pushing, not pulling, ensures proper body mechanics.
9. Wash hands.	Reduces microorganisms transmission.
Transferring a Client with Maximum Assistance	
10. Repeat Actions 1 and 2.	See Rationales 1 and 2.
11. Assess amount of assistance required for transfer. Usually 2–4 staff members are required for the maximum-assisted transfer.	Promotes client independence; ensures that enough staff are present before beginning transfer.
12. Lock wheels of bed and stretcher.	Prevents falls.
13. Have one nurse stand close to client's head.	Supports client's head during the move.
14. Log roll client & place a lift sheet under back, trunk & upper legs. Lift sheet can extend under head if client lacks head control.	Prevents flexion and rotation of client's hips and spine; maintains correct body alignment.
15. Empty all drainage bags (e.g., T-tube, Hemo Vac). Record amounts. Secure drainage system to client's gown prior transfer.	Decreases possibility of spills; prevents dislodging of tubes.
16. Move client to edge of bed near stretcher. Lift up and over to avoid dragging.	Prevents dragging, which causes shearing force?
17. The nurse on nonstretcher side of bed holds stretcher side of lift sheet up (by reaching across client's chest) to prevent client from falling.	Protects the client from falling.
18. Place pillow or slider board overlapping bed and stretcher.	Protects head from injury. Slider board eases movement of client.
 **Place slider board overlapping bed & stretcher**	 **Firmly grasp edges of lift sheet.**

19. Have staff members grasp lift sheet edges. Be sure to use good body mechanics.	Provides surface for client to slide on. Prevents dragging and shearing.
20. On the count of three, have staff members pull lift sheet and the client onto the stretcher.	Working in unison makes the overall job easier and prevents staff injury.
21. Position client on stretcher, place pillow under head & cover with sheet or bath blanket.	Promotes comfort and provides for privacy.
	Place pillow under head and cover client with blanket.
22. Secure safety belts & elevate stretcher side rails.	Prevents falls.
23. If IV pole is present, move it from bed IV pole to stretcher IV pole after client transfer.	Prevents tubing from being pulled and IV from being dislodged.
24. Wash hands.	Reduces microorganisms transmission.
Evaluation	
• The client was transferred from bed to stretcher without pain or injury. • All drainage tubes, IVs, or other devices remain intact. • Assess whether the client's skin is intact and undamaged.	

Documentation

- Document how much assistance transfer required & how much client was able to assist.
- Document time, date, reason, type of transfer & how the client tolerated the activity.

Bed to Wheelchair

Introduction

Activity improves muscle tone, increases venous return to the heart, and stimulates peristalsis. Moving a client from the bed to a chair is an important part of client activity. Moving a client from the bed to a chair, wheelchair is called a transfer. When transferring a client, the nurse needs to consider the client's ability to assist with the transfer. If the client is unable to provide any assistance or is large, the nurse may need one or more staff members to help her perform the transfer safely.

Time Allowed: 5–10 minutes

Practical skills outcomes: At the end of the procedure the student will be able to perform assisting from Bed to Wheelchair

Definitions & terminology:

- Transfer: discharging a client from one unit or agency and admitting him or her to another without going home in the interim; may take place when a client's condition changes for better or worse.

Indications

▪ To improve muscle tone	▪ Increases venous return to heart
▪ Increase of the client activity.	▪ Diagnostic purposes
▪ Elimination purposes	▪ Therapeutic purposes
▪ Admission and/or discharge	▪ Stimulates peristalsis.

Complications

- The most frequent complication in transferring a client is falling.
- Possible hazard is pulling or dislodging indwelling tubes or catheters.
- Sliding across sheets, side rails & wheelchair armrest can bruise or injure client.
- Potential injury and contamination from the floor.
- Slipping on the floor.

Safety precautions

- Follow the safety guidelines and agency policy regarding safety precautions.
- Appropriately anchor all tubes & catheters prior to client transfer.
- If patient starts to fall during transfer, ease him to closest surface (bed, floor, or chair). Never stretch to finish transfer, it can cause loss of balance, falls, strain or injuries.
- If patient has one-sided weakness, place wheelchair on patient's unaffected side. Instruct patient to pivot and bear weight as possible on unaffected side. Support the affected side because the patient will tend to lean to this side. Use pillows to support hemiplegic patient's affected side to prevent slumping in the wheelchair.
- Be sure client is wearing shoes or slippers with firm, nonslip soles.

Quality control

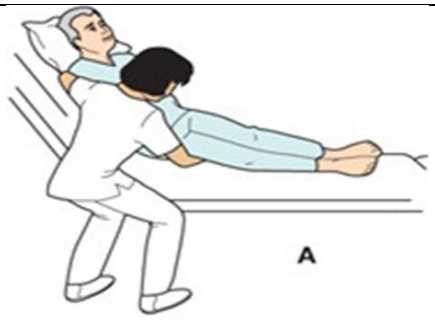
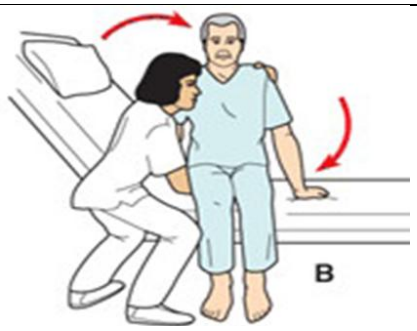
- Be sure to place any splints, braces, or other appliances on client prior to transfer.
- When transferring a client with one side weakness, use "Good to go" maxim. Perform transfer on client's strong/good, side for maximum strength & stability.
- Sliding across sheets, side rails, & wheelchair armrest can bruise or injure client.
- Placing padding on any sharp, exposed areas can help prevent injury to the client.

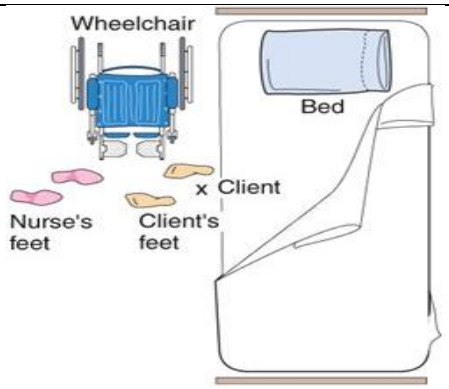
Instruments & materials

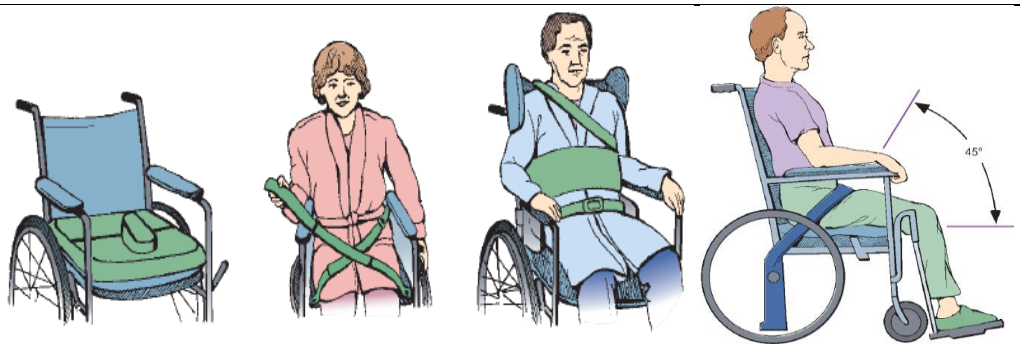
• Bed • Wheelchair, chair • Any splints, braces, or supportive equipment specific to the client • Shoes or slippers with nonskid soles • Gait belt • Transfer board (if necessary)	 

Procedures (implementation)

Assessment
1. Assess the client's current level of mobility. Determine client ability to assist with transfer. Assess for pain or confusion, which might impair ability to assist. Check for a "weak" side. Affects how the procedure will be carried out. 2. Assess for any impediments to mobility as casts, drainage tubes, catheters, IVs, or intubation. Affects how the procedure will be carried out. Prepares caregivers to keep tubes and equipment from becoming dislodged, tipping, or pulling. 3. Assess the client's level of understanding and anxiety regarding the procedure. Affects how the procedure will be carried out. Affects client teaching. 4. Assess the client's environment. Assess the available space for maneuvering the wheelchair to the bed. Affects how the procedure will be carried out. Affects safety and good body mechanics for caregivers. 5. Assess the equipment. Check bed and chair height. See whether they are adjustable. Check for chair footings and wheelchair brakes. Affects safety for client and caregivers.
Diagnosis
• Impaired Physical Mobility • Activity Intolerance • Risk for Injury
Planning: Expected Outcomes:
1. The client will be transferred from the bed to the wheelchair, commode, or chair without pain or injury. 2. Drainage tubes, IVs, or other devices will be intact. 3. The client's skin will be intact and undamaged.
Client education needed:

1. Explain to the client the need for activity and its importance in the recovery process. 2. Teach client about "Good to go" if one side of the client's body is weaker than the other. "Good to go" reminds client to lead off with stronger limb when walking or transferring. 3. Advise the client of the need for sturdy shoes or slippers with nonslip soles.	
Implementation	
Action	Rationale
1. Inform client about desired purpose and destination.	Reduces client anxiety and increases cooperation.
2. Assess client for ability to assist with the transfer and for presence of cognitive or sensory deficits.	Allows planning regarding the amount of assistance and cooperation to expect from the client.
3. Lock the bed in position.	Prevents the bed from rolling.
4. Place any splints, braces, or other devices on the client.	Provides support and prevents injury to the client.
5. Place client's shoes or slippers on feet.	Provides a nonslip surface for stability.
6. Lower the height of the bed to lowest possible position.	Reduces distance client has to step down, thus decreasing risk of injury.
7. Slowly raise the head of the bed if this is not contraindicated by the client's condition.	Minimizes lifting.
8. Place one arm under the client's legs and one arm behind the client's back. Slowly pivot the client so the client's legs are dangling over the edge of the bed and he is in a sitting position on the edge of the bed.	Supports the client while sitting him upright.
	
9. Allow client to dangle for 2–5 minutes. Help support client if necessary.	Allows for assessing client's response to sitting; reduce orthostatic hypotension.
10. Bring wheelchair close to the bed side. Place it at a 45° angle to the bed. Place chair or wheelchair on the client's strong side.	Minimizes transfer distance. Allows the client to pivot on the stronger leg.
11. Lock wheelchair brakes & elevate the foot pedals. For chairs, lock brakes if available.	Provides stability.
12. If you will be using a gait belt to assist the	Provides a secure handhold for the nurse

client, place it around the client's waist.	during the transfer.
13. Assist client to side of bed until feet are firmly on the floor and slightly apart.	Moves client into proper position. Provides stable footing for client.
	Wheelchair is placed parallel to bed as close to bed as possible. Note that placement of the nurse's feet mirrors that of the client's feet.
14. Grasp the sides of the gait belt or place your hands just below the client's axilla. Using a wide stance, bend your knees and assist the client to a standing position.	Wide stance increases nurse stability & minimize strain on back. Avoids putting pressure directly on the axilla, risking nerve damage or shoulder subluxation.
 Bend your knees, grasp the client firmly, and help him into a standing position.	 Assist client to maintain proper position.
15. Standing close to the client, pivot until the client's back is toward the chair.	Moves client into proper position to be seated.
16. Instruct client to put hands on arm supports, or place client's hands on chair's arm supports.	Allows client to gain balance and judge distance to seat.
17. Bend at the knees, easing the client into a sitting position.	Increases stability and minimizes strain on back.
18. Assist client to maintain proper posture. Support weak side with pillow if needed.	Increases client comfort.
19. Secure safety belt, place client's feet on feet pedals & release brakes if you will move client immediately. Make sure tubes & lines, arms, and hands are not pinched or caught between client & chair. If the client is sitting in a chair, offer a footstool if available.	Ensures client safety; prepares client for movement.



20. Wash hands.	Reduces microorganism's transmission.
 Once the client is moved, make sure skin, tubing, or equipment is not pinched between the client and the chair.	 Position the wheelchair footrests or use a footstool if the client is sitting in a chair.

Evaluation

• Determine whether client was transferred from bed to the wheelchair without pain or injury.

• Check that drainage tubes, IVs, or other devices remain intact.

• Assess whether the client's skin is intact and undamaged.

Documentation

- Record the client's tolerance of activity, any aids that were required, how much assistance was required and client's ability to assist.
- Note any unusual events during the transfer.

Assisting a Client with Crutch Walking

Introduction

Independence is an important part of a client's recovery process. Client's who cannot safely walk unassisted can use devices designed to aid them in walking independently. Several gaits are used with crutches: the four-point gait, three-point gait, two-point gait, and swing-through gait.

Time Allowed: Estimated time to complete the skill: 30 minutes

Practical skills outcomes: At the end of the procedure the student will be able to assist a Client with Crutch Walking

Definitions & terminology:

- Crutch: is a wooden or metal staff used to increase client mobility.
- Walker: is a waist-high metal tubular device with a handgrip and four legs.
- Cane: used by clients who can bear weight on both legs but have some weakness in one leg or hip.

Indications

- Increases self-esteem by decreasing dependence
- Decreases physical stress on weight-bearing joints and skeletal injuries
- Bilateral weakness or disability such as arthritis or cerebral palsy
- Amputated, injured, or disabled extremity (fractured leg or severe ankle sprain)
- Injury or disorder affecting one or both legs, as a paralyzed client or an amputee
- Impaired Physical Mobility

Safety precautions

- Follow the safety guidelines and agency policy regarding safety precautions.
- To prevent slipping, crutches have rubber tips, which must be kept dry. If the tips are worn or loose, they must be replaced.
- Provide a robe & shoes with firm, nonslip soles to provide for modesty and safety.

Quality control

- Be sure there is about 2 inches or 3 fingers width of distance between the client's axilla and the top of the crutch.
- Be sure client is holding cane on the good side for optimal effect.
- Be sure that the client's walker is just below waist level. This allows client's arms to be slightly bent when standing in walker. This is a stronger arm position than with the arms totally straight.
- Check the rubber tips on all assistive devices frequently. Worn rubber tips can lead to instability and falls.
- Label client's equipment so he will not wind up with another's equipment.

Instruments & materials

○ Crutches	■ Gait belt
○ Assistive device: crutches or walker	■ Tape measure
○ Sturdy footwear, properly fitted	

Procedures (implementation)

Assessment

1. Assess reason client requires an assistive device. Is it (long-term or short-term need)
2. Assess client's physical limitations: weight is client able to bear; is it on both legs or just one; good upper body strength; easily tiredness; & safety & comfort assessment.
3. Assess client's physical environment: (home or medical facility).
4. Assess client's ability to understand & follow directions regarding assistive device use

Relevant nursing diagnoses

- Impaired Physical Mobility
- Risk for Trauma
- Knowledge Deficit, related to using assistive devices for mobility

Expected outcomes

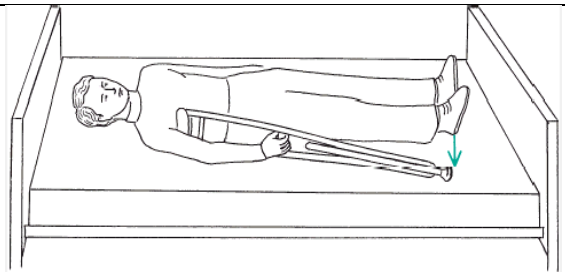
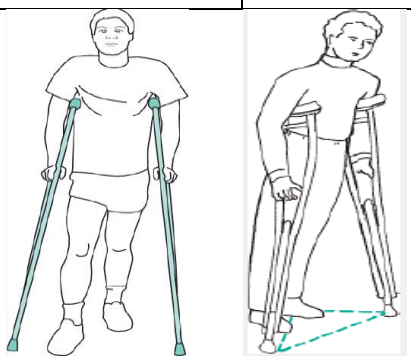
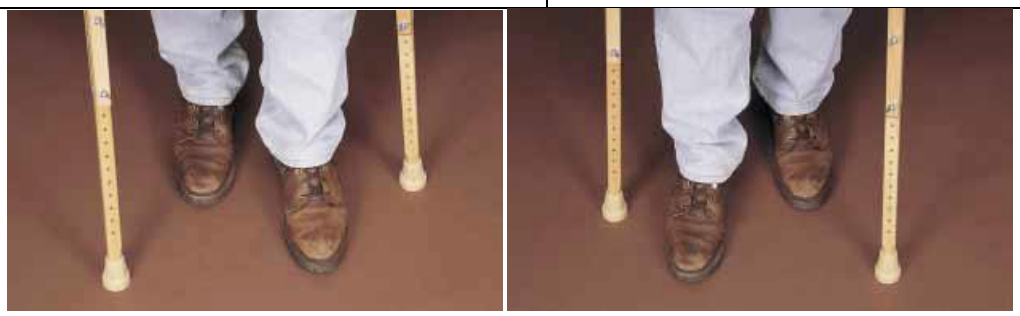
1. The client will be able to demonstrate safe and independent ambulation with the assistance of crutches, a cane, or a walker.
2. The client will feel confident and safe while using the assistive device.

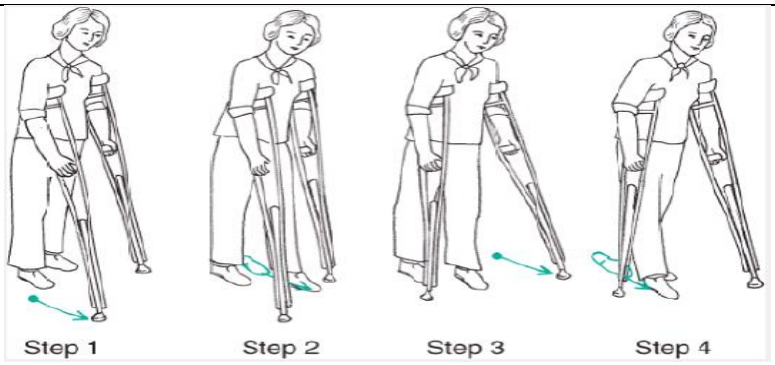
Client teaching

- Teach client to hold crutch/cane on "good" side rather than weak side.
- Teach client not to allow crutch pad to rest in axilla. This can cause damage to arm.
- If walker has wheels, teach client not to let walker get too far of his center of gravity.

Implementation

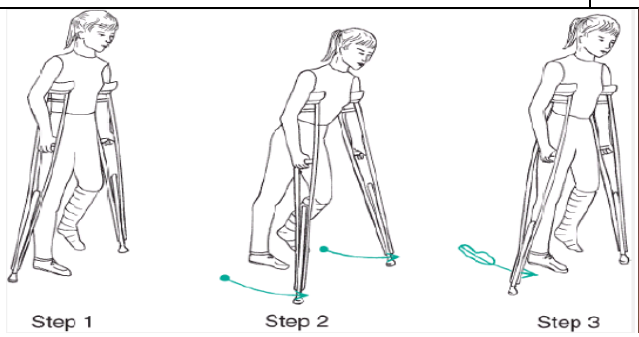
Action	Rational
Crutch walking	
1. Inform client that you will assist with ambulation using crutches.	Reduces client's anxiety; increase cooperation; promotes autonomy.
2. Assess client's range of motion strength, mobility, visual acuity, perceptions & balance	Helps determine the client's capabilities and amount of assistance required.
3. Adjust crutches to fit client. ▪ In supine, from heel to axilla. ▪ In standing set crutch position at 4-5 inches lateral & 4-6" in front of client ▪ Crutch pad fit 1.5 - 2 inches below axilla. ▪ Adjust hand grip to allow elbows bent at 30° flexion.	Provides broad base of support for client. Space between crutch pad and the axilla prevents pressure on radial nerves. Elbow flexion allows for space between crutch pad and axilla.

	
4. Lower the height of the bed.	Allows for stability.
5. Dangle client for several minutes at bed side. Assess for vertigo.	To stabilize blood pressure, prevent orthostatic hypotension.
6. Instruct client how to hold the crutches; (with elbows bent 30° & pad 3.5-5 cm below axilla). Instruct to position crutches lateral to & forward of feet. Demonstrate correct positioning.	Increase client comprehension and cooperation.
	
7. Apply belt around waist if impaired balance.	Provides support; promotes client safety.
8. Assist client to standing position with crutches, support as needed.	Standing for a few minutes will prevent orthostatic hypotension.
 Four-point gait. a. moving Rt crutch forward & Lt foot forward; & b. moving Lt crutch forward & Rt foot forward, even with right crutch	
Four-Point Gait	
9.Position crutches 4.5 to 6 inch to the side and in front of each foot. Move Rt crutch forward 4-6 inch and move the left foot forward, even with the left crutch. Move the left crutch forward 4 to 6 in. and move the right foot forward, even with the right crutch. Repeat the four-point gait.	The four-point gait (used for partial or full weight bearing) provides greater stability. Weight bearing is on three points (two crutches and one foot or two feet and one crutch) at all times. The client must be able to bear weight with both legs.





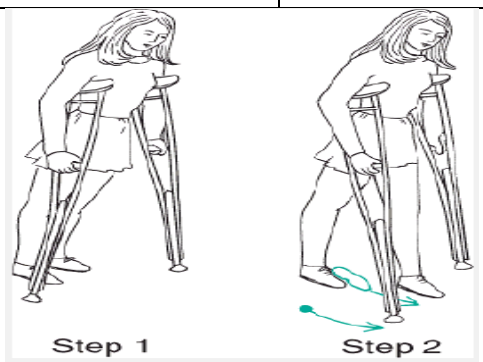
Three-Point Gait	
Advance both crutches and the weaker leg forward together 4 to 6 inch. Move the stronger leg forward, even with the crutches. Repeat the three-point gait.	The three-point gait (used for partial or non–weight bearing) provides a strong base of support. This gait used if client has a weak or non–weight-bearing leg.



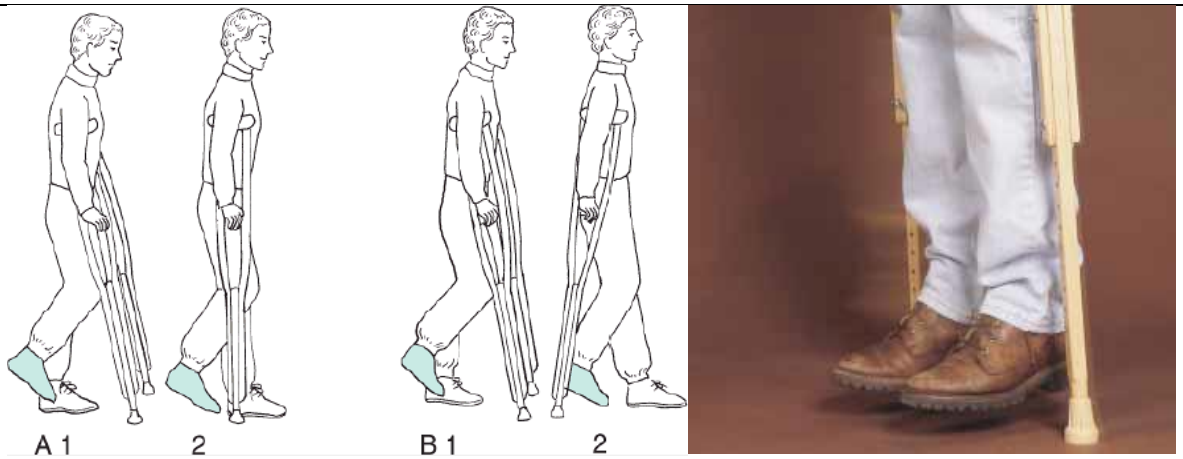


Crutch walking: three-point gait, advance both crutches & weaker leg forward together

Two-Point Gait	
11. Move the left crutch and right leg forward 4 to 6 inch. Move right crutch and left leg forward 4-6 inch. Repeat two-point gait.	(Used for partial weight bearing) provides a strong base of support. This gait is faster than the four-point gait



Swing-Through Gait	
12. Move both crutches forward together 4 to 6 inch. Move both legs forward in a swinging motion, even with the crutches. Repeat the swing-through gait.	The swing-through gait permits a faster pace. This gait requires weight bearing on both legs, greater balance, and more strength.



Crutch Walking: Swing-Through Gait



Walking with a Cane

13. Inform client that you will be assisting with ambulation using a cane.	Reduces anxiety; increase cooperation & comprehension; promotes autonomy.
14. Lower the height of the bed.	For sitting with feet on floor for stability
15. Dangle the client at the side of bed for several minutes. Assess for vertigo.	Allows for stabilization of BP, thus preventing orthostatic hypotension.
16. Assess client's range of motion strength, mobility, visual acuity, perceptions & balance	Helps determine the client's capabilities and amount of assistance required.
17. Apply the gait belt around the client's waist if balance and stability are unreliable.	Provides support; promotes client safety.
18. Have the client hold the cane in hand opposite the affected leg.	Promotes safety and cooperation. Promotes client autonomy.
19. Have client push himself up from sitting position while pushing down on bed with arms.	Increases upper body strength.
20. Have client stand at bedside for moments.	Allows the client to gain balance.
21. Assess the height of the cane. With the cane placed 6 inches ahead of the client's body, the	A 25%–30% bend at the elbow provides for better muscle strength and support

top of the cane should be at wrist level with the arm bent 25%–30% at elbow.	than if the arm is straight.
22. Walk to the side and slightly behind the client, holding gait belt if needed for stability.	Allows the nurse to provide stability or assistance if the client needs it.
The Cane Gait	
23. Move the cane and the weaker leg forward at the same time for the same distance. Place weight on the weaker leg and the cane. Move the strong leg forward. Place weight on the strong leg.	The cane helps to provide a wide base of support for the body when the weight is on the weaker leg.
Walking with a Walker	
	
24. Inform client that you will be assisting with ambulation using a walker.	Reduces anxiety; increase cooperation & comprehension; promotes autonomy.
25. Lower the height of the bed.	To sit with feet on floor for stability.
26. Dangle the client at the side of bed for several minutes. Assess for vertigo.	Allows for stabilization of Bp, thus preventing orthostatic hypotension.
27. Provide a robe or other covering & shoes with firm, nonslip soles.	Provides for modesty and safety.
28. Assess client for strength, mobility, range of motion, visual acuity, perceptions and balance.	Helps determine the client's capabilities and amount of assistance required.
29. Apply the gait belt around the client's waist if balance and stability are unreliable.	Provides support; promotes client safety.
30. Place the walker in front of the client.	Position the walker for use.
31. Have client push himself up from the sitting position while pushing down on bed with arms.	Increases upper body strength.
32. Have the client transfer his hands to the walker handgrips, one at a time.	Allows the client to maintain balance while transferring his weight.
33. Be sure the walker is adjusted so the handgrips are just below waist level and the	Provides maximum support from the arms while ambulating.

client's arms are slightly bent at the elbow.	
34. Walk to side & slightly behind client, holding gait belt if needed for stability.	Allows the nurse to provide stability or assistance if the client needs it.
Evaluation	
• Assess if the client is able to demonstrate safe and independent ambulation with the assistance of crutches, a cane, or a walker. • Assess if the client feels confident and safe while using the assistive device.	

Documentation

- Document the type of device client is using, level of understanding regarding the use of the device, how far the client is able to walk using the device, and the client's response to the activity.
- Any information that is pertinent to nurses or therapists regarding type of device or a particular client's needs should be noted.