LKS Faculty of Medicine
School of Nursing
香港大學護理學院

NURS1603 Clinical Skills in Practice (2022-23)
Elimination & Body Mechanics

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Lecturer
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Photo source: HKU Medicine (2021)

Intended learning outcomes

By the end of this video, students should be able to:

- Describe the physical characteristics of elimination (urinary and bowel) and factors that affect elimination
- Identify alternative devices for elimination
- Describe the principles perineal care and nursing interventions for incontinence patients
- Identify factors that affect mobility
- Explain positioning techniques and identify assistive devices for assisting patients in turning and transfer positions
- Describe the principles of correct body mechanics
- Outline general principles that apply to transferring patients
- Identify different positions devices used for safety and comfort

Elimination

- Urinary elimination
  - The process of releasing excess fluid and metabolic wastes
  - Urination: occurs when urine excreted
  - Urinary system:
    - Kidneys
    - Ureters
    - Bladder
    - Urethra
- Bowel elimination
  - The act of expelling faeces (stool) from the body
  - Also known as “defecation”
  - All structures of gastrointestinal (GI) tract must function in coordinated manner
  - Peristalsis

Key facts about urinary system

- Filter toxins out of the body
- Waste products:
  - Water, urea, uric acid, salts
- The kidney cells re-absorb fluid and many other useful substances
- Normal person: 1.7 litres of urine produce/ day

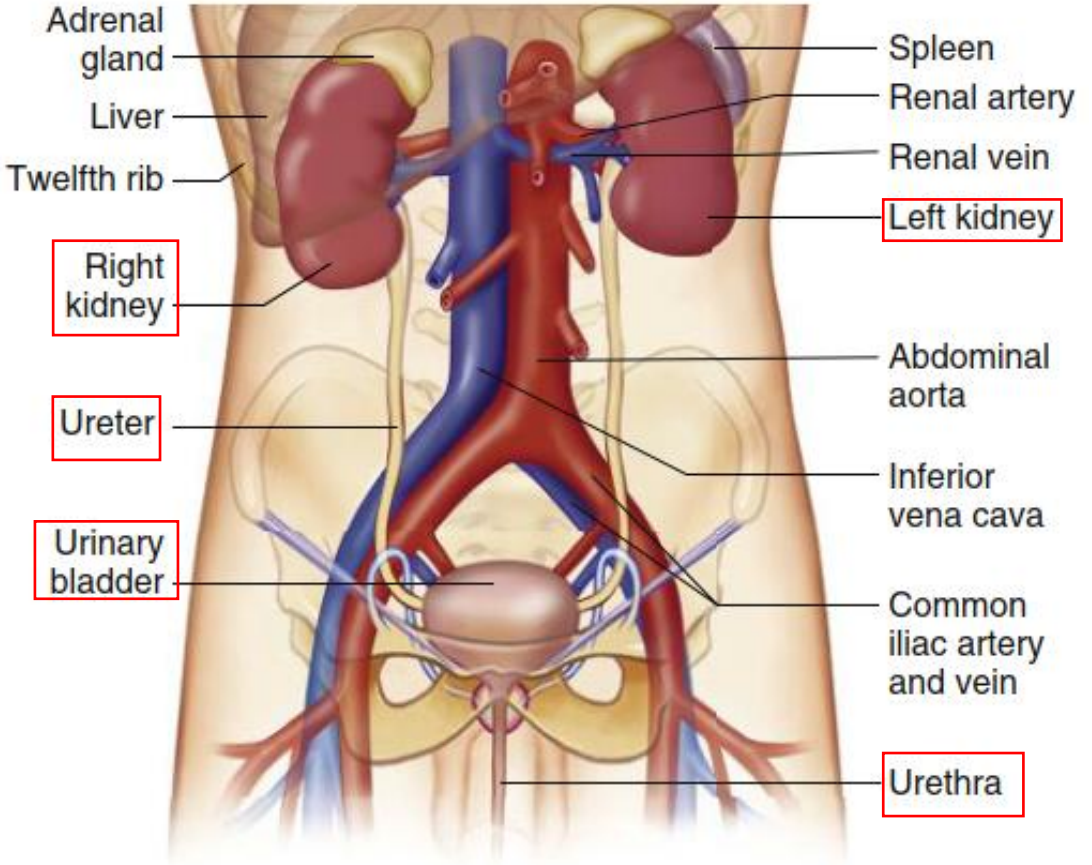


FIGURE 37-1 Organs of the Urinary System. (From Patton KT, Thibodeau GA: *Anatomy & physiology,* ed 8, St Louis, 2013, Mosby.)

McCane et al (2014)

Characteristics of urine

Characteristics	Normal	Abnormal	Common causes of variations
Volume	• 500 – 3000ml/day • 1200ml/day (average)	• <400ml/day	• Low fluid intake • Excess fluid loss • Kidney dysfunction
		• >3000ml/day	• High fluid intake • Diuretic medication • Endocrine diseases
Colour	• Light yellow (yellow amber)	• Dark amber • Brown • Reddish brown • Orange	• Dehydration • Liver/gallbladder disease • Blood • Water-soluble dyes • Medication
Clarity	• Transparent	• Cloudy	• Infection
Odor	• Mild smell	• Foul • Strong • Pungent	• Infection • Dehydration • Certain foods

Factors affecting urinary elimination

- The degree of neuromuscular development and the integrity of the spinal cord
  Example:
  - Spinal cord injury: may cause neurogenic bladder dysfunction → incontinence
- The volume of fluid intake and amount of fluid losses
  Example:
  - Strenuous activity
  - Thailand football team trapped in a cave (2018)
- The amount and type of food consumed
  Example:
  - Caffeine, alcohol: may promote diuresis
  - Garlic, coffee, curry, alcohol can affect the smell of urine
- The person's circadian rhythm, habits, opportunities for urination and anxiety
  Example:
  - Incontinence may find in stress and anxiety situations
- Medical and medication history
- Pathological conditions, e.g. Benign prostatic hyperplasia

Abnormal patterns of urinary elimination (1)

- Anuria
  - The absence of urine or a volume of 100ml or < in 24 hours
  - The kidneys unable to form urine, bladder is empty → the patient feels NO urge to urinate
- Oliguria
  - Urine output < 400ml in 24 hours
  - Inadequate elimination of urine
  - Example: the bladder is being partially emptied during voiding
  - Residual urine (Post void residual [PVR]):

    Adult:

    - <50 ml of PVR that remain in the bladder → adequate bladder emptying
    - Over 200ml of PVR → inadequate bladder emptying

    Elderly:

    - 50 – 100 ml PVR is considered normal

Abnormal patterns of urinary elimination (2)

- Polyuria
  - > normal urinary elimination and may accompany minor dietary variations

  Example:
  - Taking certain medications ↑ urinations
  - Diabetes mellitus
- Nocturia
  - Nighttime urination

  Example:
  - In aging men with enlarged prostate gland → affect complete bladder emptying
- Dysuria
  - Difficult or uncomfortable voiding
  - Common symptoms of the urethra or bladder infection
  - **Frequency** (the need to urinate often) & **Urgency** (a strong feeling that urine must be eliminated quickly) often accompanying dysuria

Abnormal patterns of urinary elimination (3)

- Incontinence
  - Inability to control either urinary or bowel elimination

Type	Description	Example	Common Causes	Nursing management
Stress	The loss of small amounts of urine when intra-abdominal pressure rises	- Dribbling with sneezing, coughing, laughing	- Loss of perineal & sphincter muscle tone - Prolapsed uterus - Menopause - Obesity	- Pelvic floor muscle exercise - Weight reduction
Urge	Need to void perceived frequently with short-lived ability to sustain control of the flow	- Urge to urinate immediately, frequently followed by loss of urine before reach a bathroom	- Bladder irritation secondary to infection - Loss of bladder tone from recent continuous drainage with an indwelling catheter	- Omit bladder irritants, e.g. alcohol or caffeine - Administer the diuretics in the morning.
Overflow	Urine leakage due to the bladder is not completely emptied Bladder distended with retained urine	- Voids small amounts frequently or urine leaks around a catheter	- Overstretched bladder - Weaken muscle tone secondary to obstruction of the urethra - Enlarged prostate	- Adequate bowel elimination - Hydration

Abnormal patterns of urinary elimination (6)

- Incontinence

Type	Description	Example	Common Causes	Nursing management
Functional	Urinary tract is functioning properly but has difficulty getting to the toilet before urination occurs	Voiding occurs while attempting to overcome barriers, e.g. doorways, manipulating clothing	- Impaired mobility - Impaired cognition - Physical restraints - Inability to communicate	- Access to a toilet, commode, or urinal - Assistance to a toilet according to planned schedule
Total	Loss of urine without any identifiable pattern or warning	Pass urine without any ability or effort to control	- Altered consciousness secondary to a head injury - Loss of sphincter tone	- Diapers/ napkins - External catheter - Indwelling catheter

Toileting: Bedside commode (1)

- Patients who cannot walk to the bathroom but can transfer out of bed to a chair can use a commode chair for toileting at bed side

Commode chair with removable waste container

Commode chair over the toilet

Toileting: Bedside commode (2)

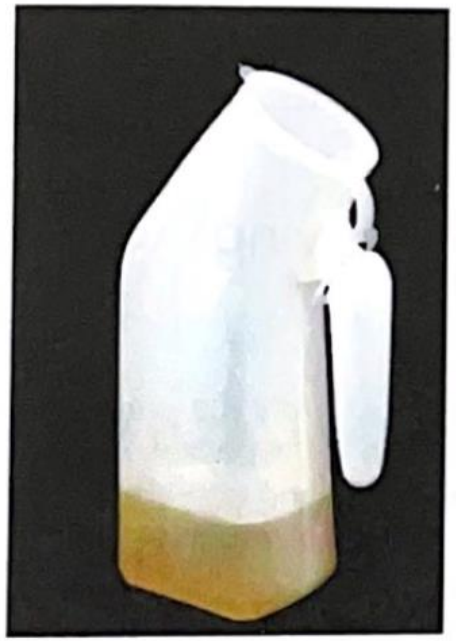
Safety alert:

- Before assisting the patient to the commode, assess the patient can safely transfer independently or not. If the patient cannot do so, determine the support needed.
- Always **lock** wheels on the commode when in use
- For patient with risk of fall, the nurse should remain with the patient
- Provide toilet paper for self-cleaning or assist with cleaning as necessary
- Observe and measure the amount of urine and faeces of the patient after used, record on the fluid balance record (Fluid intake and output chart).
- Inform the physician for any abnormality, e.g. tarry stool

Commode chair with removable waste container

Urinal

- A male patient uses a urinal to void into when unable to walk to the commode or bathroom or when bedridden

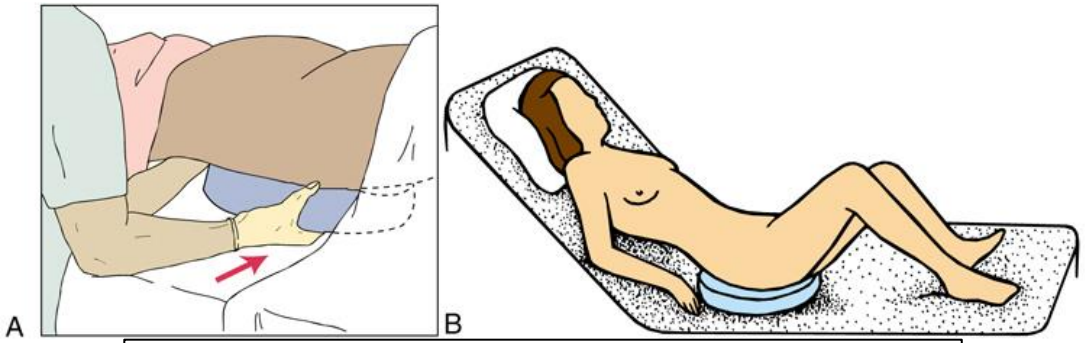


(Donnelly-Moreno, 2021)

Bedpans

- 2 types of bedpans
  - Regular bedpan has a high rim
  - Fracture pan has a lower rim
    - For patients with body or leg casts and patients restricted from raising their hips (e.g., patients who underwent total joint replacement)
- Sitting is the most effective position for passing urine or stool
- A trapeze (monkey pull) on the bed frame also facilitates moving on and off a bedpan.

Left, Regular bedpan. Right, Fracture bedpan
(Perry et al, 2018)



A, Placing bedpan under patient's hips.
B, Correct positioning for placing mobile patient on bedpan.
(Perry et al, 2018)

Principles in assisting patients in toileting

- Identify patient's need for toileting
- Assist patient to toilet/ commode/ bedpan/ fracture pan/ urinal regularly
- Remove patient's essential clothing to allow elimination
- Provide patient with privacy throughout the procedure during elimination and wear appropriate personal protective equipment (PPE) according to the infection control guideline
- Assist/ advise patient to remain in an appropriate position for toileting
- Facilitate toilet hygiene after completion of elimination
- Assess patient's perianal region for redness, compromised skin integrity, irritation, swelling, and foul odour
- Measure and record the patient's output as indicated
- Observe, document and report patient's condition, output amount and the care given

Condom catheter (External catheter/ Incontinence sheath)

- A rubber sheath that fits over the penis and connected to a collection tube and bag
- Can collect urine and control incontinence with less risk of infection than an indwelling urinary catheter

Condom catheter & Adhesive strap

Urine collection bag

Nursing Process in applying condom catheter (1)

Assessment

- Explain the procedure to the patient
- Provide privacy
- Inspect the penis for any irritation or areas of skin breakdown
- Assess for allergy or sensitivity to latex or cleansing solution

Planning

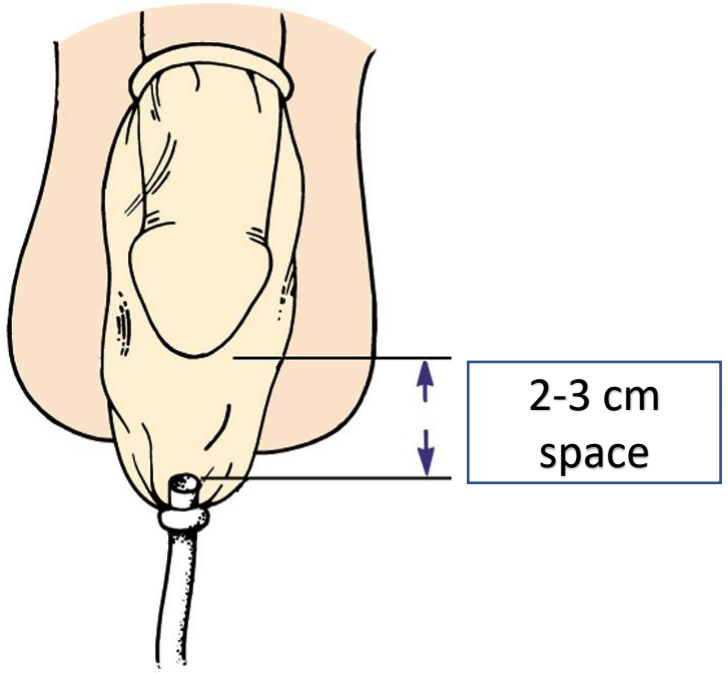
- Measure diameter of the penile shaft or use a measure guide supplied by the manufacturer to determine appropriate catheter size

Different size of Condom catheter

Nursing Process in applying condom catheter (2)

Implementation

- Perform perineal care before the procedure, clean the penis and scrotum and rinse and dry.
- Check the foreskin of an uncircumcised male and make sure the foreskin is returned to its natural position. Failure to return the foreskin can lead to swelling and possible constriction of blood flow.
- Apply the condom catheter onto the penis. Allow 2-3 cm space between the tip of penis and the end of the condom catheter, too much space may result in catheter twisting.



Distance between end of penis and tip of condom catheter. (Perry et al, 2018)

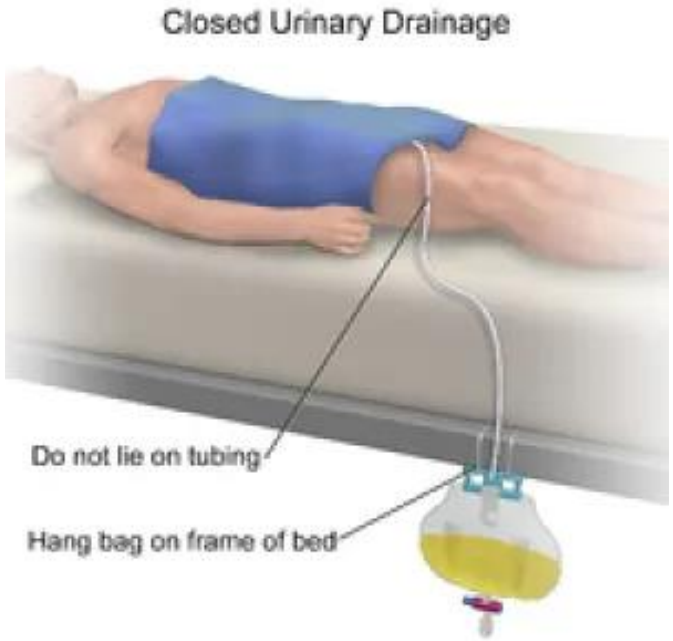
Nursing Process in applying condom catheter (3)

Implementation

- Apply adhesive foam strip at the correct tension, not too tight or too loose
- Inspect the incontinent sheath for twists and the extension tubing for kinks to prevent obstruction of urine flow, which cause the catheter to dislodge.
- Connect the condom catheter to a urine bag correctly.

Evaluation

- Check the urinary drainage system is free of twists and kinks to reduce the risk of urinary tract infection.
- Change the condom catheter daily or whenever necessary to prevent infection
- Evaluate patient's genital area daily to detect any signs of skin irritation or excessive urethral discharge.



Urinary Catheterization: indwelling catheter

- Using a device inside the bladder
- Indwelling catheter: secured with a balloon that inflated once the distal tip is within the bladder
- Allow to drain the freely from the bladder
- For diagnostic and therapeutic purposes
- Need for sterile technique + knowledge of anatomy

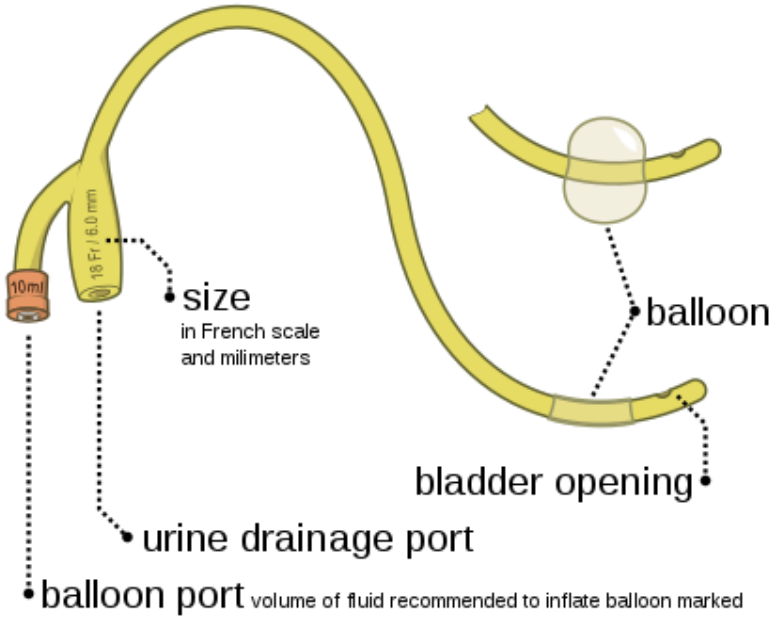


Photo: https://en.wikipedia.org/wiki/Foley_catheter

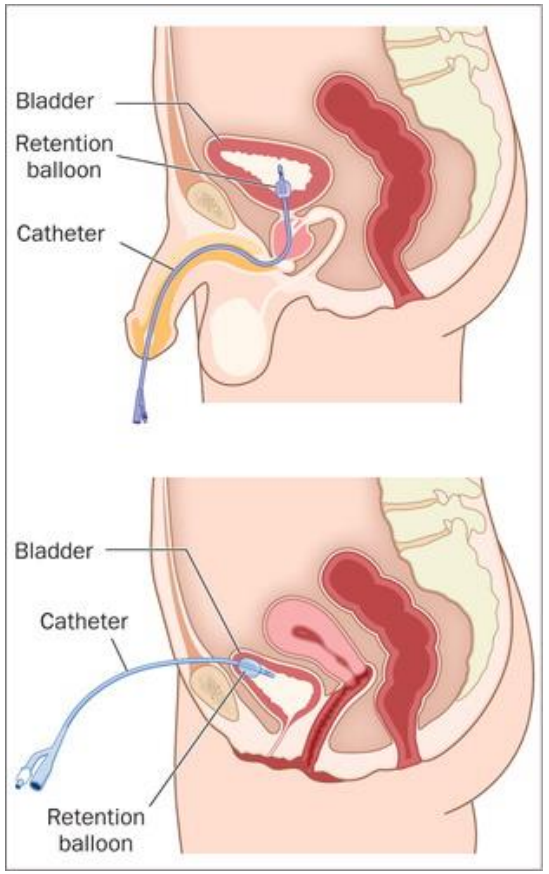


Photo: Hill & Mitchell (2018)

Bowel elimination

- Peristalsis
  - Moves fibre, water and nutritional wastes along the ascending, transverse, descending and sigmoid colon toward the rectum
  - Active during eating
- Common factors affecting bowel elimination

Factor	Effect
Types of food consumed	Influence colour, odor, volume, and consistency of stool
Fluid intake	Influence moisture content of stool
Drug	Slow or spend motility
Neuromuscular function	Affects the ability to control rectal muscles
Abdominal muscle tone	Affects the ability to increase intra-abdominal pressure
Opportunity for defecation	Inhibits or facilitates elimination

Stool Characteristics

- Inspect the stool or ask the patient to describe its appearance
- Assess:
  - Stool colour
  - Odor
  - Consistency
  - Shape
  - Unusual components

Characteristic	Normal	Abnormal
Colour	Brown	Black Clay-coloured (tan) Yellow Green
Odor	Aromatic	Foul
Consistency	Soft, formed	Hard, dry Watery Paste-like
Shape	Round, full	Unformed Flat Stone-like
Components	Undigested fibre	Worms Blood Pus Mucus

Abnormal pattern in bowel elimination

- Constipation
  - An elimination problem characterized by dry, hard stool that difficult to pass
  - Other signs and symptoms include:
    - Abdominal fullness
    - Abdominal distention
    - Rectal pressure
    - Pain with defecation
    - ↓ frequency of bowel movement
    - Inability to pass stool
    - Change in stool characteristics, e.g. liquid stool, hard, small stool
- Diarrhoea
  - The urgent passage of watery stool and is commonly accompanied by abdominal cramping
  - Associated signs and symptoms: nausea, vomit and blood/ mucus in stool
- Faecal incontinence
  - Inability to control the elimination of stool
    - May results from neurological changes

Care of Patients with Incontinence

Perineal hygiene for the incontinent patient

- Good skin care and prevention of skin breakdown is crucial
- Ammonia is a skin irritant
- Incontinent patient are high risk for incontinence-associated dermatitis (IAD)
- Cleansing of perineal skin after incontinence: **STARDARD CARE**

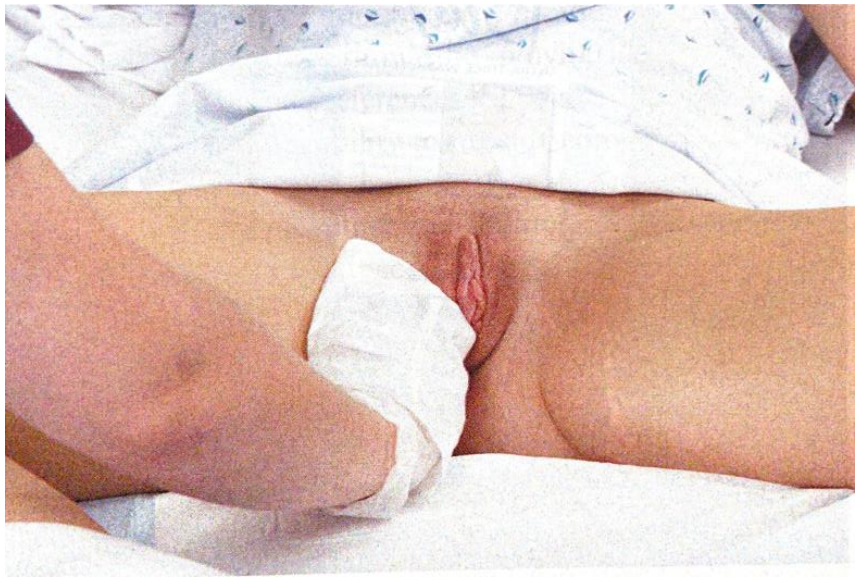
Perineal care

- Includes cares of external genitalia and the anal area
- Perform during bed bath, if the patient is incontinent, at bedtime and after urination and bowel movement
- Promote cleanliness and prevents infection, removes irritating and odorous secretions
- Patients with skin breakdown, can apply moisture-barrier skin protectant after perineal care

Perineal care: Female

- Involves cleansing the upper inner thighs, the labia majora, and the folds between the labia major and minora
- Always wipe from **front to back in one stroke** to avoid contaminating the vagina or urethra with microorganism from the anus
- The buttocks are cleaned after the genitals

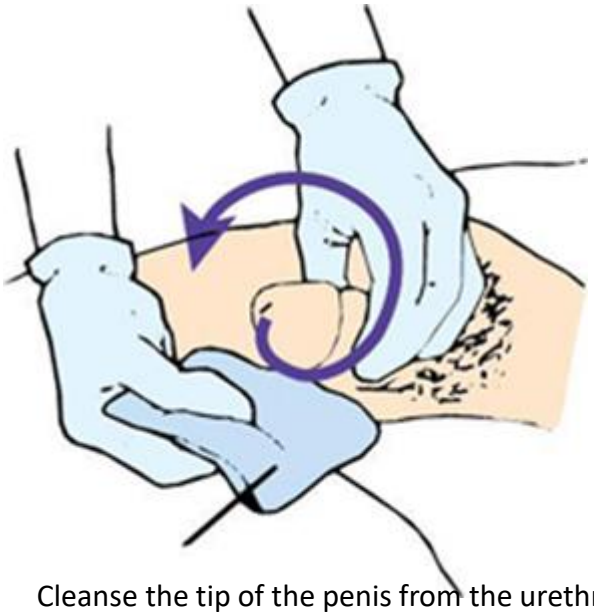
Cleanse the area from the pubic area toward the anus in one stroke. Repeat several times until it is cleaned.(Perry et al, 2018)



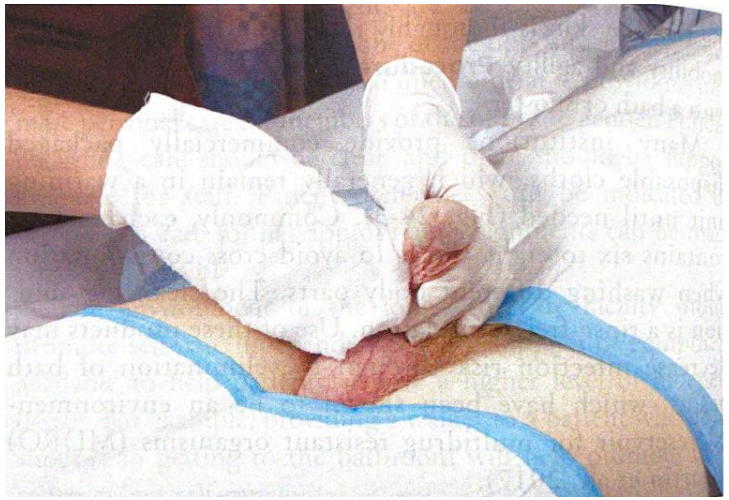
(Craven et al, 2021)

Perineal care: Male

- Involves washing the upper inner thighs, penis, and scrotum
- In uncircumcised men, retract foreskin and clean glans penis (refer to the photos)
- Cleanse the tip of the penis from the urethral meatus outward in a circular motion
- Cleanse the penile shaft from the tip downward toward the scrotum
- After cleansing, **MAKE SURE THE FORESKIN IS RETURNED TO ITS NATURAL POSITION**
- The buttocks are cleaned after the genitals



Cleanse the tip of the penis from the urethral meatus outward in a circular motion. Clean the penile shaft from the tip downward toward the scrotum. (Perry et al, 2018)



(Craven et al, 2021)

Mobility

Mobility

- Ability to move freely within the environment
- ADL: **A**ctivities of **D**aily **L**iving
  - The tasks of everyday life
  - Include :
    - Basic function of self-care
    - Instrumental ADL: complex higher order skills, e.g. managing money, food preparation

Level of Functional Health Status as Defined by the Following Criteria	
ADL-I I: independence	• The patient does not require assistance from another person for any ADLs.
ADL-PD PD: Partially dependence	• The patient requires some assistance from another person for ADLs
ADL-D D: Dependence	• The patient requires total assistance for ADL

Factors Affecting Mobility

- Lifestyle & habits
  - Inactivity and unhealthy lifestyle, e.g. smoking, lack of exercise
- Impair musculoskeletal system
  - Trauma cause injury to joints, tendons, ligaments, muscles or bones
  - Overexerting a muscle or sprain
  - Demineralization of the bones, e.g. osteoporosis, osteoarthritis, gout
- Impair nervous system control
  - Chronic disorders of nervous system affect the control muscular movement and coordination, e.g. Parkinson's disease
  - Spinal cord or brain injury, paralysis occurs below the level of injury
  - Infection, tumours, or stroke (cerebrovascular accident) can disrupt the central nervous system

Factors affecting mobility

- Impair circulation and oxygenation
  - Many chronic physical conditions, like heart failure or peripheral vascular disease may limit the effective blood flow
  - Lung disorders decrease the amount of oxygen delivered to all body tissues
  - Anaemia decrease the haemoglobin which affects the oxygen binding
- Congenital problems
  - Congenital diseases, e.g. Scoliosis, cerebral palsy cause disability
- Affective disorders
  - Depression and catatonic state
- Therapeutic modalities
  - Restrictive devices in medical treatment, e.g. casts, braces, and splints
  - Bed rest: mobility is restricted for therapeutic benefits, e.g. ↓ pain

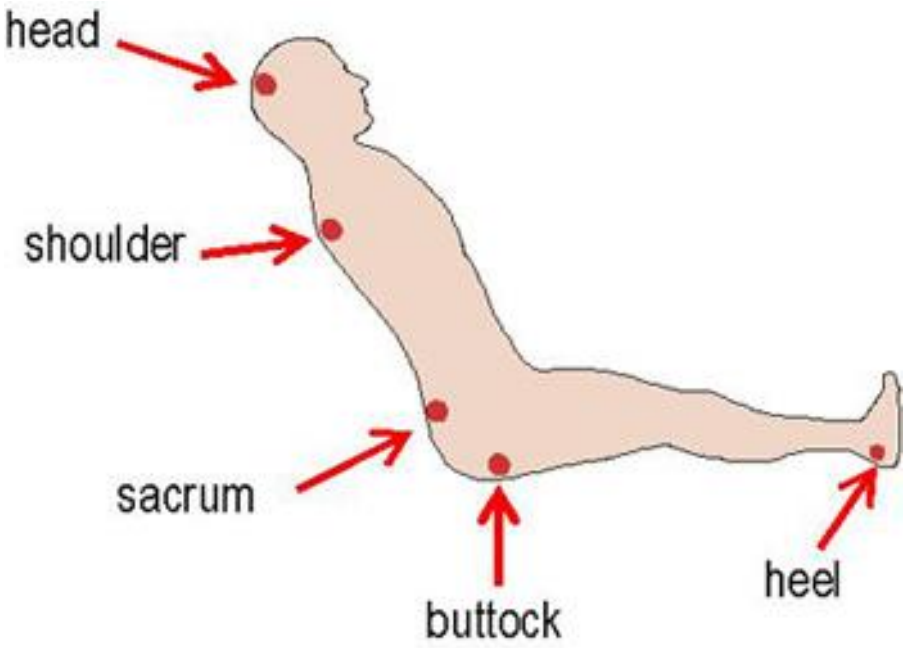
Impact of Immobility

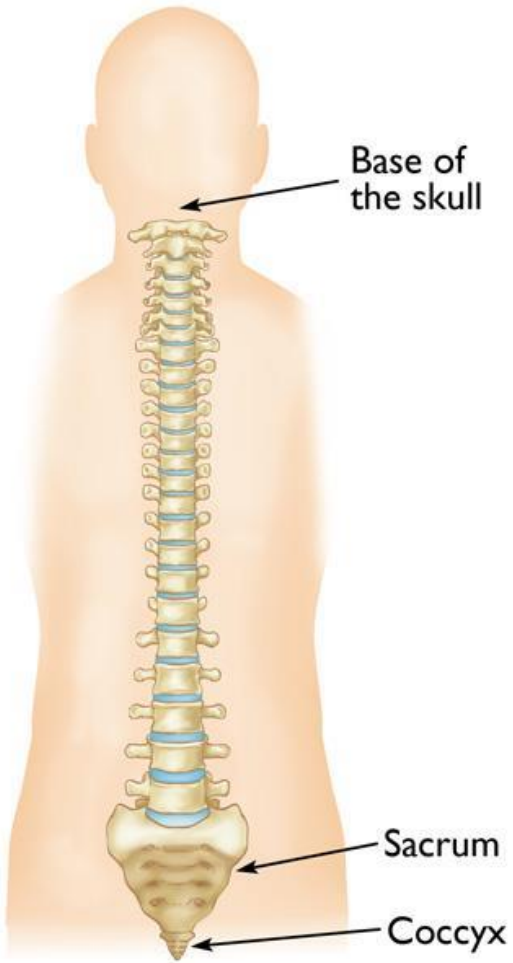
- Muscle atrophy and weakness
- Contractures and joint pain
  - Contracture: progressive shortening of a muscle and loss of joint mobility, causing ↓ circulation of blood flow
  - Foot drop: a muscular weakness or paralysis makes it difficult to lift the front part of foot and toes

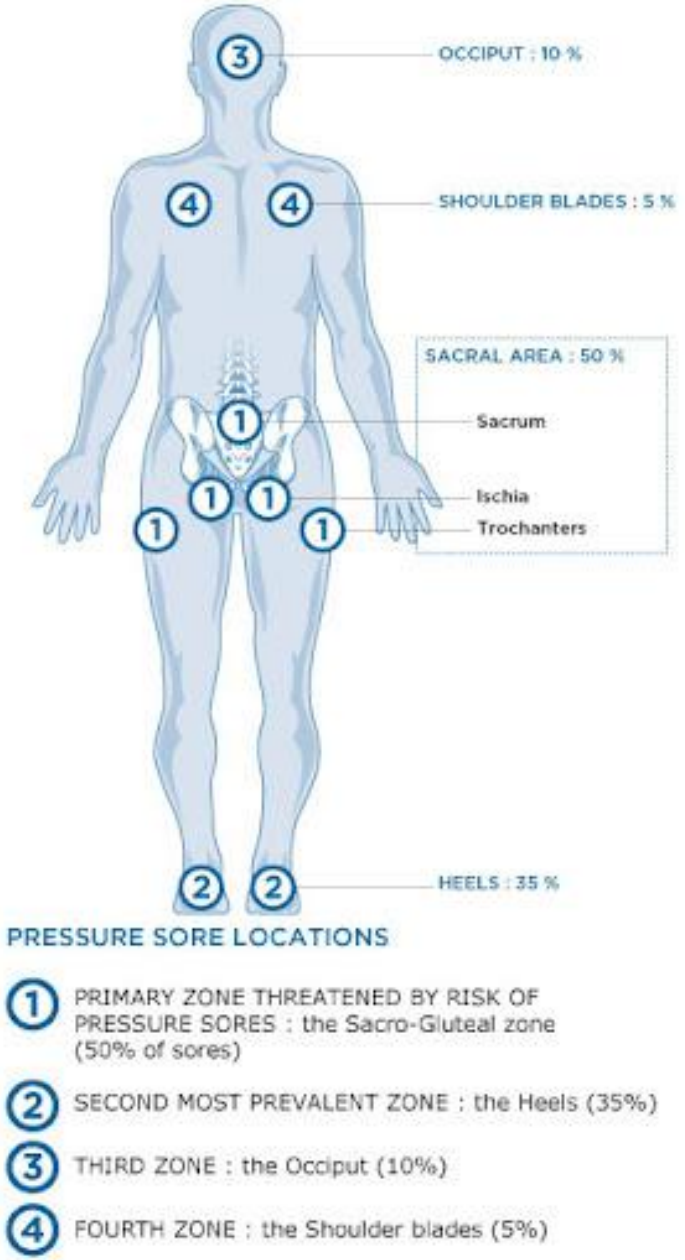
Impact of Immobility (Physiologic function)

- Orthostatic hypotension
  - Decreased ability to maintain systemic blood pressure when changing from supine to an upright immobility
- Thrombus formation and embolism
  - Immobility promotes venous stasis, which contributes to the development of deep vein thrombosis (DVT)
  - DVT: an embolus occurs when the clot breaks away from the vessel wall and enters circulating blood
- Decreased lung expansion
  - Immobile patient breathes less deeply and with greater effort
- Pressure injury
  - Pressure exerted over an area of skin or subcutaneous tissue exceeds the pressure required for adequate blood flow to the area

Common sites of pressure sore







Impact of immobility (Physiologic function)

- Decreased metabolic rate
  - The basal metabolic rate decreases during immobility
  - Severely restricted activity affects the hormonal secretions, causing weight loss and loss of muscle mass.
- Impaired immunity
  - Significant ↓ the concentration of circulating antibodies
  - Lymphatic transport may decrease when skeletal muscles are inactive
- Constipation
  - Abdominal and perineal muscles can be weakened by muscle atrophy, causing difficulties to exert pressure to evacuate stool.
- Affect the sleep pattern
  - Immobilized patient may doze frequently during the day, they may need to be awakened frequently to be turned, monitored, or given treatments and medications.

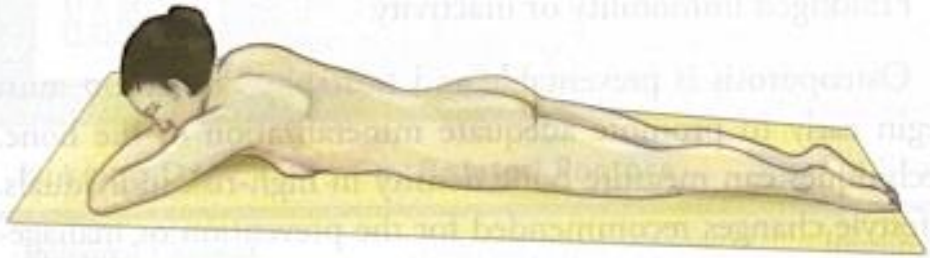
Impact of immobility (Psychosocial function)

- Cognitive and pain
  - Preoccupation with somatic complaints, difficulty with time perception, difficulty with understand and following instructions, confusion is common in immobility patients
  - Pain may caused by joint stiffness, pressure ulcers, pneumonia which may cause discomfort
- Changes in self-perception and self-concept
  - Immobility contributes to a feeling of powerlessness, especially when the patient must depend on others
  - Self-concepts is altered when the patient must depend on devices, such as wheelchairs, or walkers
- Roles and relationships
  - For adults, immobility may interfere with the ability to work, resulting in temporary and permanent unemployment with corresponding financial stress

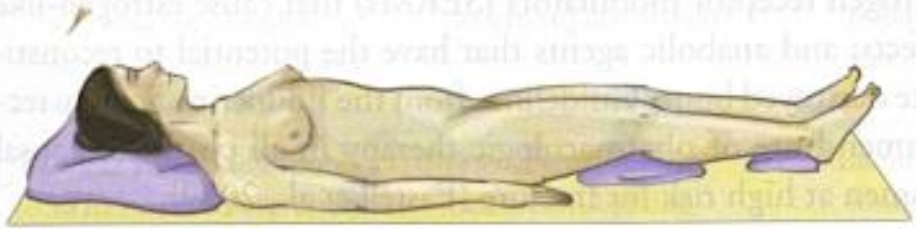
Nursing Interventions for Patients with Immobility

- Positioning
  - Therapeutic position is used to prevent complications
  - Correct position maintains patients' body alignment and comfort
  - Immobilized patient require intense nursing care with frequent reposition to reduce risk of complications
  - Reposition patient as needed and at least every 2-4 hours
  - Patient may have their own preference on specific position, patients adopt positions that ↑ their pressure injury risk
  - Routine monitoring of patient positions is import

Positioning



Prone: The patient lies face down. Arms may cushion the head or may be flexed. An alternative position for an immobilized patient, the prone position is contraindicated after abdominal surgery and in patients with respiratory or spinal problems.

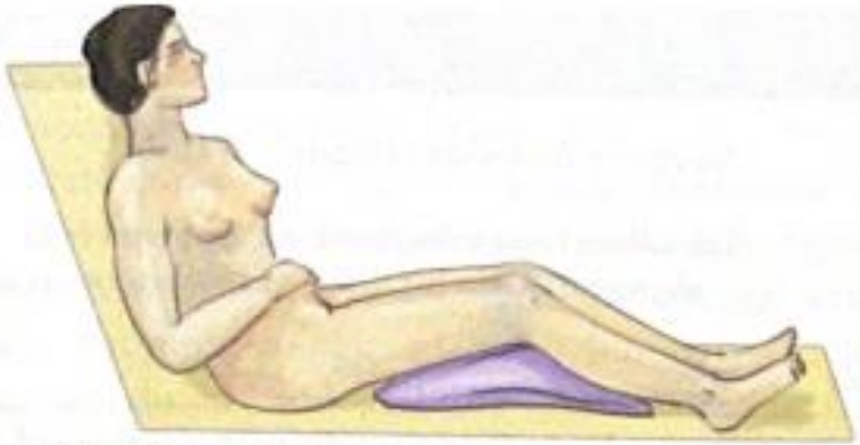


Supine: The patient lies flat on back. Pillows may be used under the head, knees, and calves to raise heels off the mattress. An alternative position for a patient on bed rest, the prone position is used after spine surgery and some spinal anesthesia. It is not used for patients with dyspnea or at risk for aspiration.

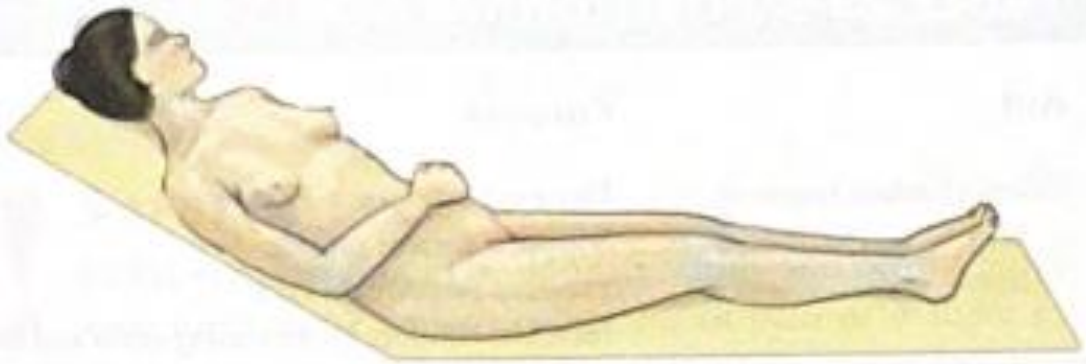
Side-lying: The patient lies on the side with weight on hip and shoulder. Pillows support and stabilize uppermost leg, arm, head, and back. A choice position for patients with pressure on bony prominences of the back and sacral pressure sores, side-lying is not used after hip replacement and other orthopedic surgery.

Sims': In this semiprone position the patient lies on the side with weight distributed toward the anterior ilium, humerus, and clavicle. Pillows support the flexed arms and legs. The position is contraindicated in many spine or orthopedic conditions.

(Craven et al,,2021)

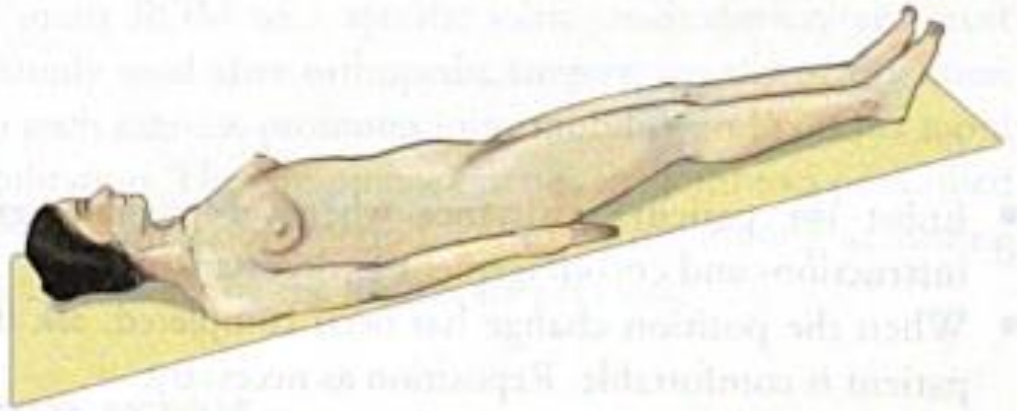


Fowler's: This sitting position raises the patient's head 80 to 90 degrees. Pillows can be used under the head and arms and a footboard may also be used. The position improves cardiac output, promotes ventilation, and eases eating, talking, and watching TV. It is not used after spine or brain surgery.



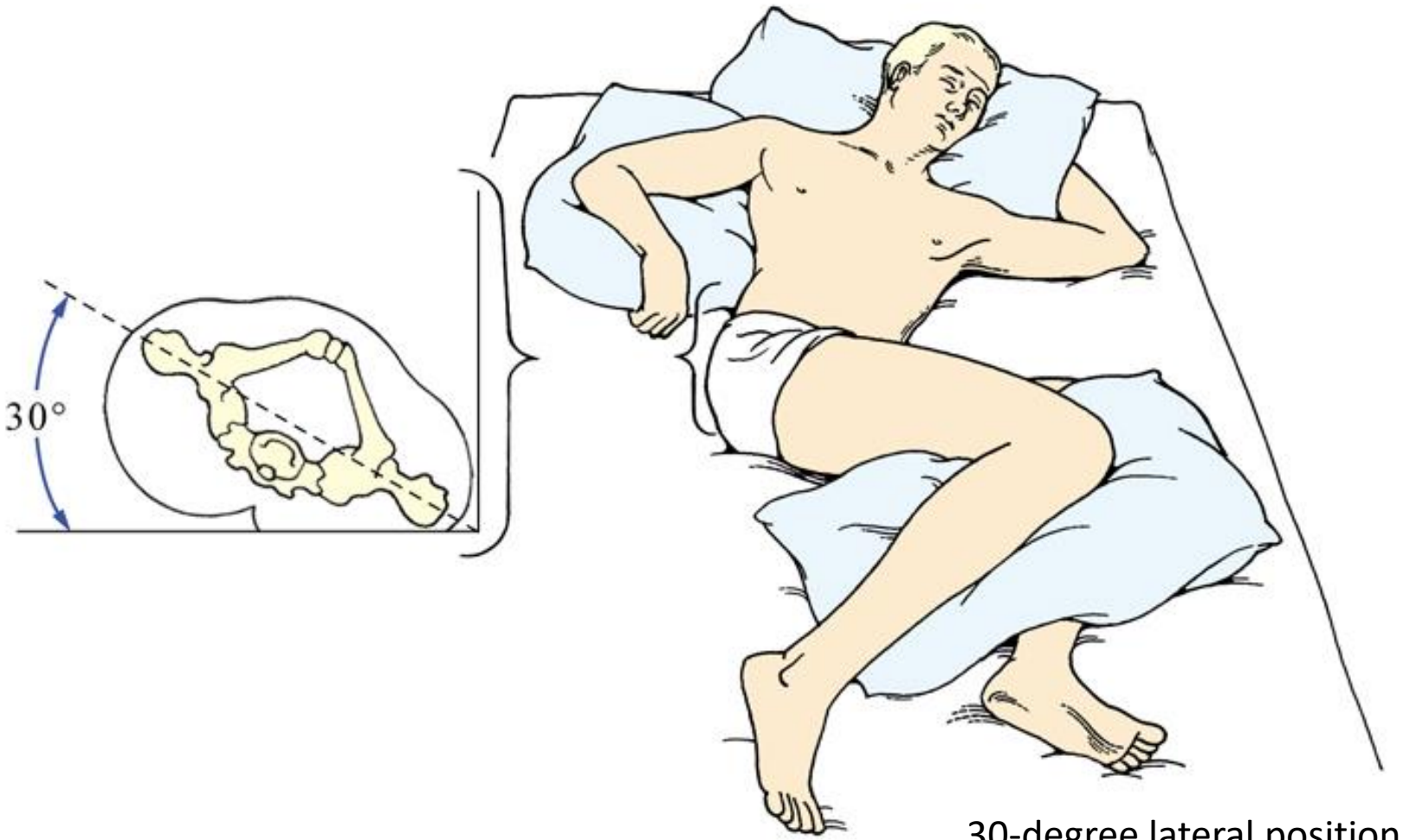
Semi-Fowler's: In this semisitting position the patient's head is elevated 30 to 45 degrees. This position has the same advantages and contraindications as Fowler position.

Dorsal recumbent: The patient lies supine with legs flexed and rotated outward. This position is used extensively for vaginal examination but not for abdominal assessment because it promotes contraction of abdominal muscles.



Trendelenburg's: The patient lies supine with head 30 to 40 degrees lower than feet. The position may be used for postural drainage and to promote venous return. Hypotension may be an after-effect of this position.

(Craven et al,,2021)



30-degree lateral position with pillows in place. Patient lies on the side of the body with top leg over the bottom leg. This position helps relieve pressure on the coccyx.

(Perry et al,,2021)

Positioning Aids

Aid	Purpose	Nursing considerations
Pillow	• Elevates body part • Support patient on side • Prevent pressure on skin • Increases comfort by decreasing stress and strain on body parts	• Use pillow to maintain proper body alignment
Heel protectors (sheepskin or foam)	• Reduce mattress pressure on heels	• Laundery as necessary 

Positioning Aids

Aid	Purpose	Nursing considerations	
Trapeze bar	• Helps patient raise trunk from bed • Allows patient to hep in transfers and position changes	• Teach the patient how to use the bar • Avoid hitting the head when using the device in assisting patient	
Side rail	• Help weak patient turn independently • Protects patient from falling out of bed	• Keep in raised position to aid patient mobility and ensure patient safety.	

Turning of Patient

- Turning of patient refers to changing of position for deliberative placement of patient from one side to another

Assessment and Planning

- Explain the reason and procedure to patient and their caregivers
- Assess the patient's general condition, skin condition, range of motion and presence of pain
- Formulate turning schedule
- Use appropriate turning device(s) if applicable
- Arrange and support patient's head, neck and all limbs properly before turning
- Keep patient safe during the procedure
- Attend to wounds, drainage tubes and infusion lines when turning
- Follow safe practice on manual handling from the policy of the institution

Turning of Patient

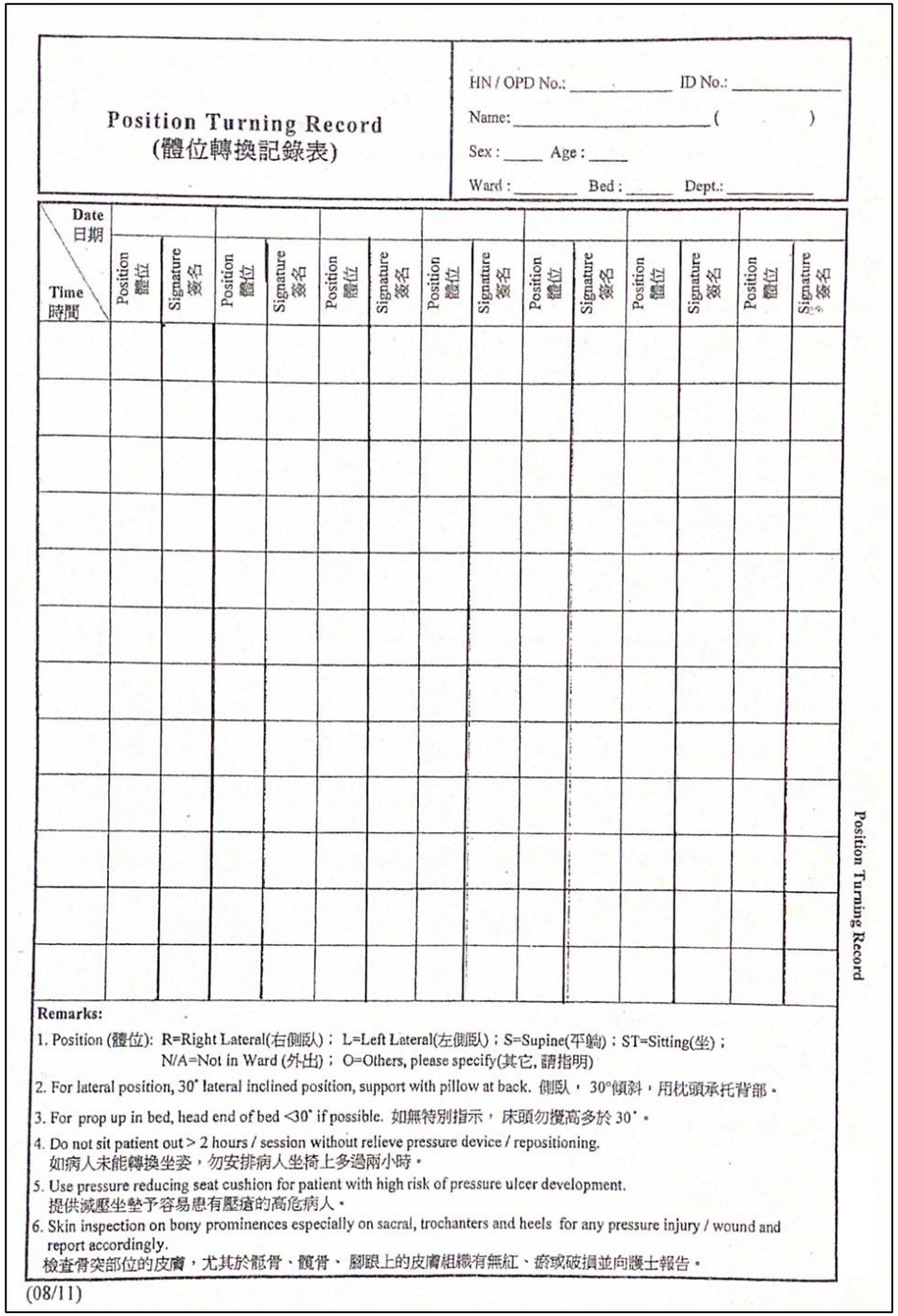
Implementation

- Turn patient with appropriate skill and adequate assistance
  - Handle patient's body properly to prevent pain or injury
  - Prevent any friction or pulling during turning
  - Pillows can be used to support the patient's head, neck, arms, hands and feet
  - If there is a risk for pressure injury formation,
    a) Maintain patient in a 30-degree side lying and use hand to test if the sacrum is off the bed considering prevention of pressure injury
    b) Keep the heels free from the bed
    c) Avoid position patient on an area of erythema or pressure injury
    d) Use appropriate pressure relieving devices if indicated to reduce risk of pressure injury formation
- Position patient in correct anatomical alignment
- Check the proper function of the drainage tubes and infusion lines, if any, after turning.

Evaluation

- Observe, document, and report patient's comfort, skin condition, time of turning and position

Clinical Record of Position Turning



Position Turning Record
(體位轉換記錄表)

HN / OPD No.: _____ ID No.: _____
Name: _____ ( )
Sex : ____ Age : ____
Ward : _____ Bed : _____ Dept.: _____

Date 日期 / Time 時間	Position 體位	Signature 簽名	Position 體位	Signature 簽名	Position 體位	Signature 簽名	Position 體位	Signature 簽名	Position 體位	Signature 簽名	Position 體位	Signature 簽名	Position 體位	Signature 簽名

Position Turning Record

Remarks:

1. Position (體位): R=Right Lateral(右側臥)； L=Left Lateral(左側臥)；S=Supine(平躺)；ST=Sitting(坐)；
   N/A=Not in Ward (外出)； O=Others, please specify(其它, 請指明)
2. For lateral position, 30° lateral inclined position, support with pillow at back. 側臥，30°傾斜，用枕頭承托背部。
3. For prop up in bed, head end of bed <30° if possible. 如無特別指示，床頭勿搖高多於 30°。
4. Do not sit patient out > 2 hours / session without relieve pressure device / repositioning.
   如病人未能轉換坐姿，勿安排病人坐椅上多過兩小時。
5. Use pressure reducing seat cushion for patient with high risk of pressure ulcer development.
   提供減壓坐墊予容易患有壓瘡的高危病人。
6. Skin inspection on bony prominences especially on sacral, trochanters and heels for any pressure injury / wound and report accordingly.
   檢查骨突部位的皮膚，尤其於骶骨、髖骨、腳跟上的皮膚組織有無紅、瘀或破損並向護士報告。

(08/11)

Use of Ambulation Aids

- Mechanical devices can help the patient with certain limitation to ambulate safely

Ambulation aids	
• Canes	• Useful for patient who can bear weight but need support for balance or who have decreased strength in one leg • Made of wood or metal and should be about waist high • Acts as an additional ‘leg’ by providing the patient with 3 points of support during ambulation

A & B: Adjustable canes
C: Quadripod cane
The American Heritage Medial Dictionary (2007)

Use of Ambulation Aids

- Mechanical devices can help the patient with certain limitation to ambulate safely

Ambulation aids	
• Walkers (Walking frame) 	• Lightweight, tubular metal structures which provide more support than canes • The patient grips the walker, picks it up, and moves it forward • Be sure to clear hallways of obstructions before the patient uses the walkers

Use of Ambulation Aids

- Mechanical devices can help the patient with certain limitation to ambulate safely

Ambulation aids	

• Crutches
 
	• Allow the patient to walk without bearing weight on the legs
	• Indicated when the patient has a sprain, fracture, or nonwalking cast
	• Underarm crutches:
	  • The patient must use the arms, not the shoulders to support the body weights
	  • The crutches must be fitted correctly

Occupational Hazards for Nurses

Occupational Hazards for Nurses

- Sharps injuries
- Harmful exposures to chemicals and hazardous drugs
- Back injuries
- Workplace violence
- Stress
- Shift work and long work hours

Most Common Physical Dangers for Nurses

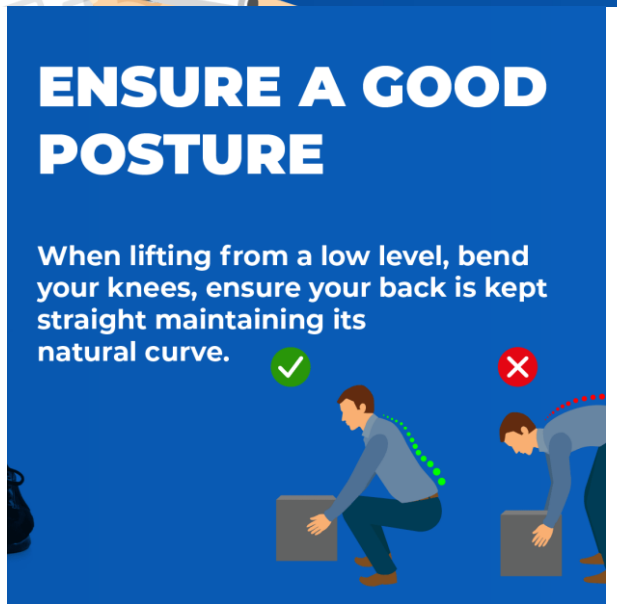
- Major concern in occupation healthcare is the potential for musculoskeletal disorders.
  - Heavy manual lifting when transferring or repositioning patients
  - Straining to lift or move obese patient
  - A significant amount of stand and working

Body Mechanics

- Using alignment, posture, and balance in a coordinated effort to perform activities
  - Examples of activities:
    - Lifting
    - Bending
    - Moving
- Proper use of body mechanics
  - promotes safe musculoskeletal function and
  - helps nurses avoid placing undue strain on muscles

Principles of Proper Body Mechanics

- Adjust the height of the work area when possible
- Assume the starting position that will permit freedom of movement in range, direction and position.
- Keep body balanced over the base of support with knees relaxed and trunk erect
- Bend hips and knees to alter position of the body, widening the base of support as need, for effective leverage and use of energy



Principles of Proper Body Mechanics

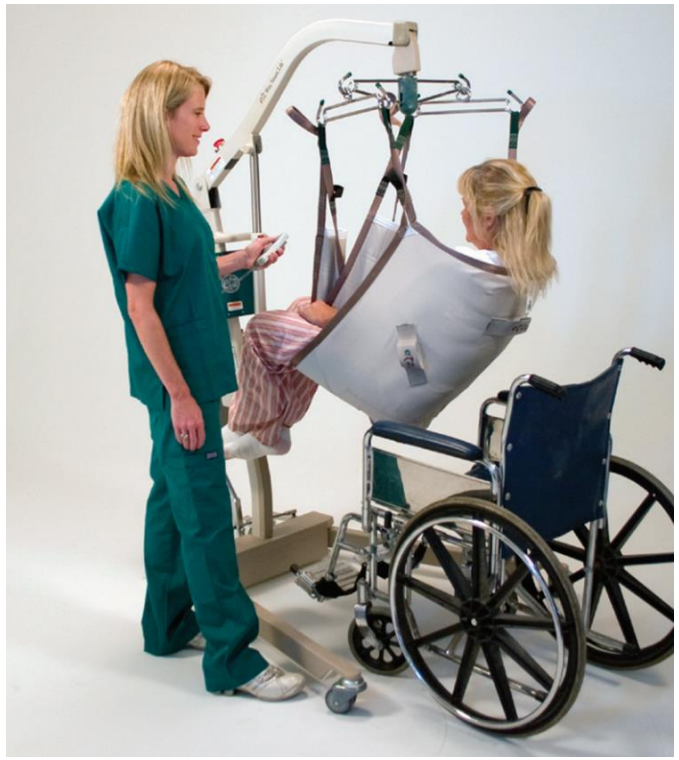
- Face the direction of motion, using the muscles of the lower extremities and shifting body weight for lifting, pushing, and pulling action
- Hold objects close to the body when lifting
- Use rhythmic, smooth and coordinated motions at a reasonable speed
- Use mechanical devices when appropriate

Guidelines for Moving Patients

- Assess the patient's abilities and limitations
- Organize the environment, and request needed help to ensure safety
- Explain what you are going to do and how you expect the patient to help
- Permit the patient to do as much as his or her capabilities allow
- Consider precautions, e.g. Lock wheels, maintain appropriate working height
- Follow the principles of body mechanics
- Keep movements smooth and rhythmic
- Prevent trauma, e.g. friction against skin, pulling joints, grabbing muscles
- Check the patient for proper body alignment and comfort, and provide the patient with a call bell before leaving

Lifting of Patient

- Position by lifting action for deliberative placement of patient from one location to another
- Devices for lifting
  - Use of hydraulic lift with hammock to lower patient into chair
  - Ceiling lift



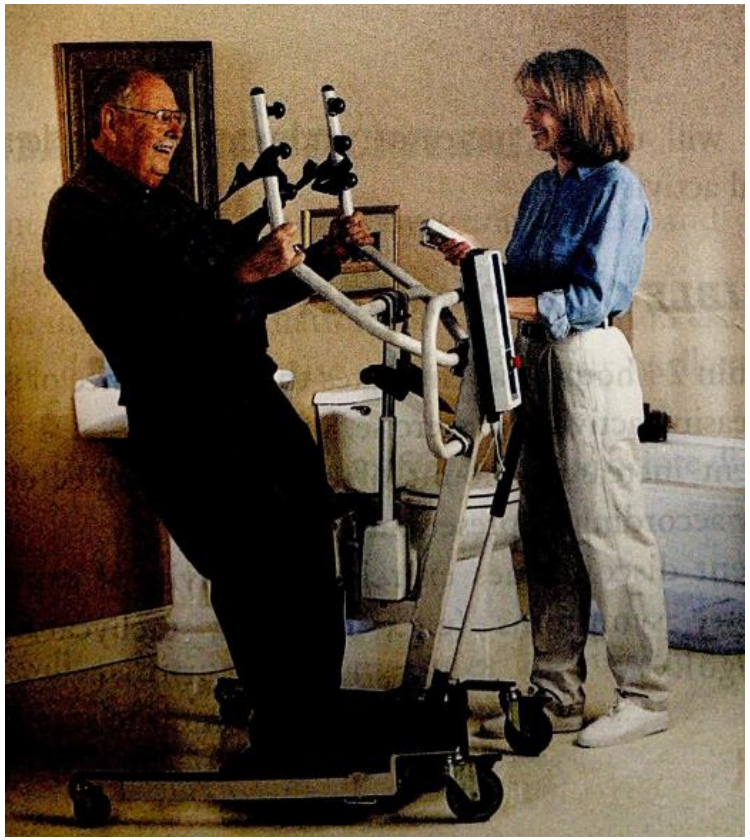
Use of hydraulic lift with hammock to lower patient into chair.

Ceiling lift

(Perry et al,,2021)

Using a Mechanical Lift

- 2 main groups
  - Mobile, e.g. full lifting device, stand aids
  - Overhead, ceiling hoist
- Active hoist
  - Use when a person is capable of some weight bearing ability at least on one leg and has trunk stability to aid balance, e.g. stand aids
- Passive hoist
  - Fully lift/lower a person and do not require that person to have any ability to physically aids
  - Sling is used to support the person, e.g. full lifting device

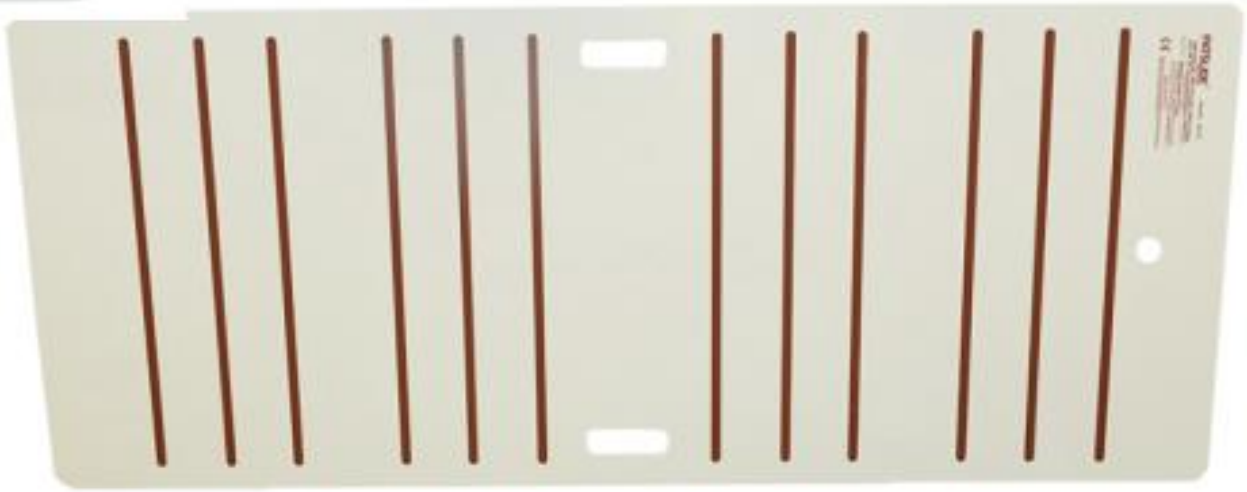


Stand aids (Craven et al., 2021)

Use of Mechanical lift/ hoist

- Be thoroughly familiar with the operation
- Place the fabric sling under the patient and attached to the hydraulic lifter
- Provide clear instruction and verbal support
- Refer to manufacturer’s guideline for proper operation

Lateral-Assist Devices



Lateral-Assist Devices

- Reduce patient-surface fracture during lateral transfers
- Example: roller boards, slide boards
- Make transfers safer and more comfortable for the patient
- Transfer boards are placed under the patient
- Transfer boards are made of smooth, rigid, low-friction, provide a slick surface for patient during transfer and reduce friction

Lifting of Patient

Assessment & Planning

- Explain the reason and procedure to patient and their caregivers
- Assess patient's general condition, skin condition, range of motion and presence of pain
- Determine the method of lifting

Implementation

- Lift patient with appropriate devices, skill and adequate assistance
  - All healthcare staff assisting lifting must have adequate training in manual handling operations according to hospital guideline
- Arrange and support all limbs properly before lifting, e.g. pillows, heel protectors

Lifting of Patient

Implementation

- Keep patient safe during the procedure
- Attend to wounds, drainage tubes, infusion lines, breathing tube and oxygen apparatus when lifting
- Follow safe practice on manual handling
- Position patient in correct anatomical alignment and maintain patient comfort during lifting
- Check the proper function and correction position of drainage tubes, infusion lines, breathing tubes and oxygen apparatus if any, after lifting

Evaluation

- Observe, document and report patient's general condition and the care given

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