



Chapter 15

Body Mechanics and Patient Mobility

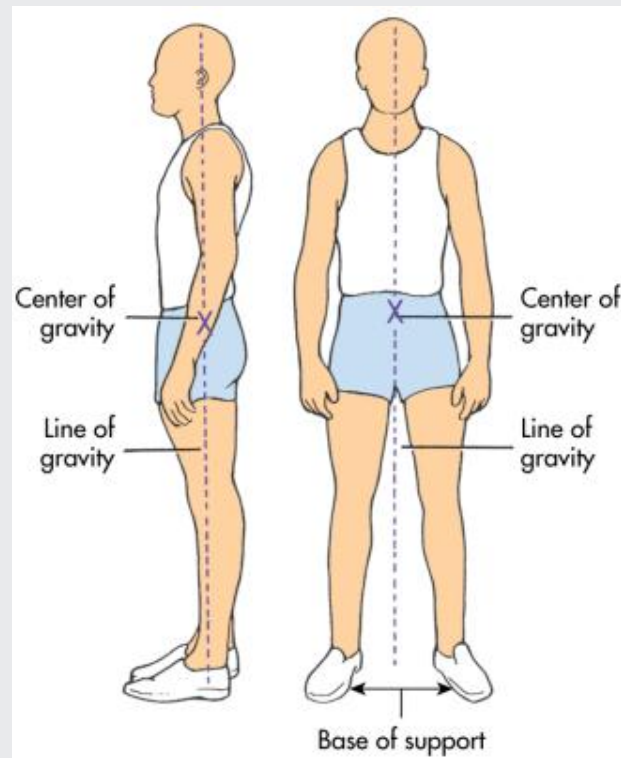


Using Appropriate Body Mechanics

- Body Mechanics
 - Field of physiology that studies muscular action and the function of muscles in maintaining the posture of the body
- The musculoskeletal system must be protected to prevent injury to the patient and the nurse.
 - Maintain a wide base of support.
 - Bend the knees and hips rather than the back.
 - Stand in front of the object.
 - Adjust the working level to one of comfort.
 - Carry objects close to the midline of the body.



Figure 15-1



(From Potter, P.A., Perry, A.G. [2005]. *Fundamentals of nursing*. [6th ed.]. St. Louis: Mosby.)

Good position for body mechanics.



Figure 15-2



(From Sorrentino, S.A. [2004]. *Assisting with patient care*. [2nd ed.]. St. Louis: Mosby.)

Picking up a box using good body mechanics.

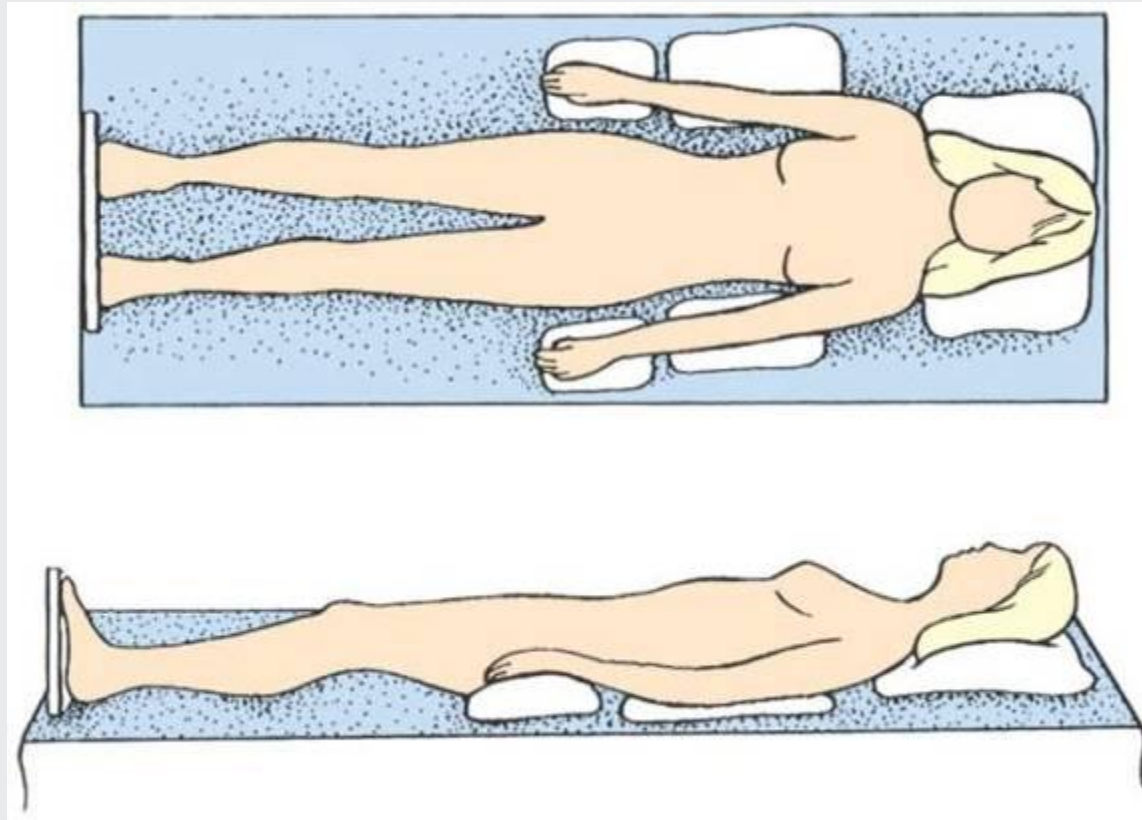


Positioning Patients

- There are many positions to use to prevent patients from developing complications.
 - Dorsal (supine)
 - Lying horizontally on the back
 - Dorsal recumbent
 - Supine position with patient lying on back, head, and shoulders, with extremities moderately flexed, legs may be extended
 - Fowler's
 - Head of bed raised 45 to 60 degrees



Skill 15-1: Step 9a

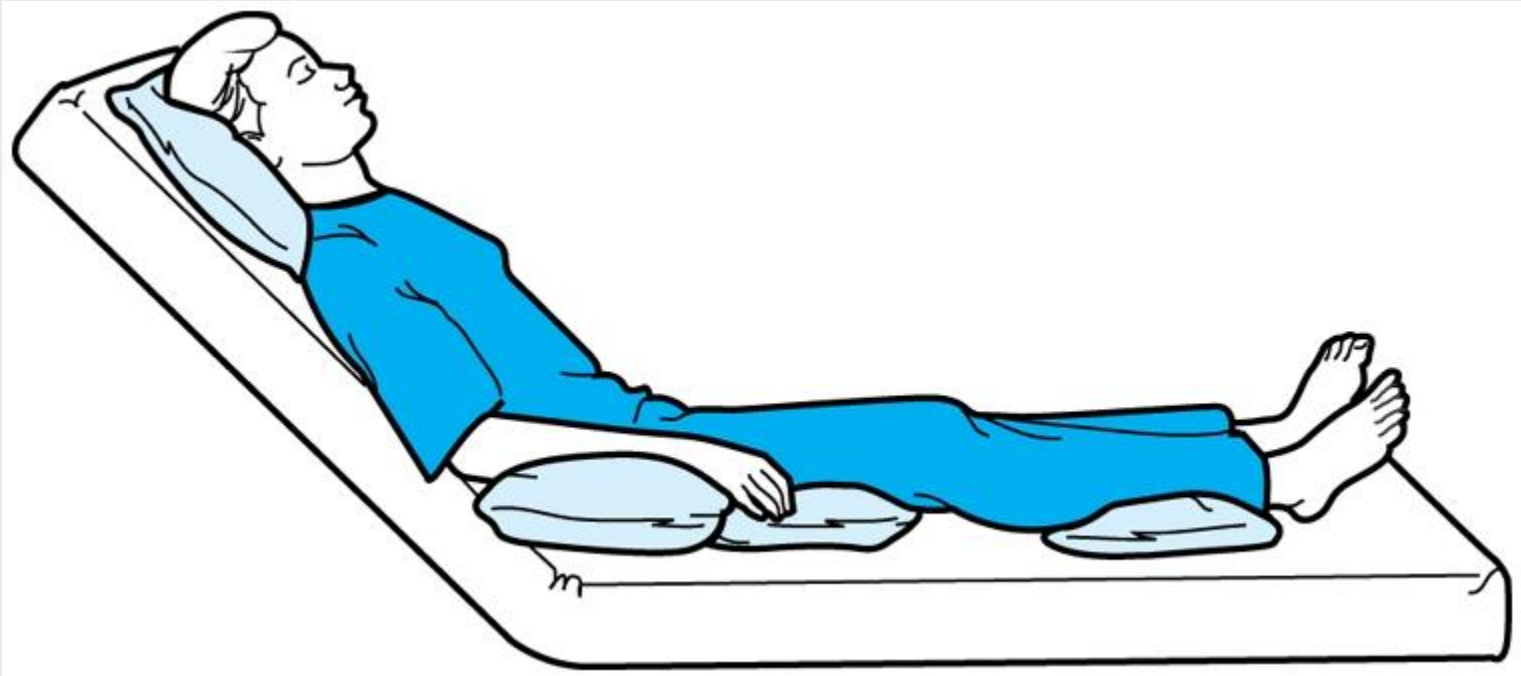


(From Potter, P.A., Perry, A.G. [2003]. *Basic nursing: Essentials for practice*. [5th ed.]. St. Louis: Mosby.)

Positioning patients.



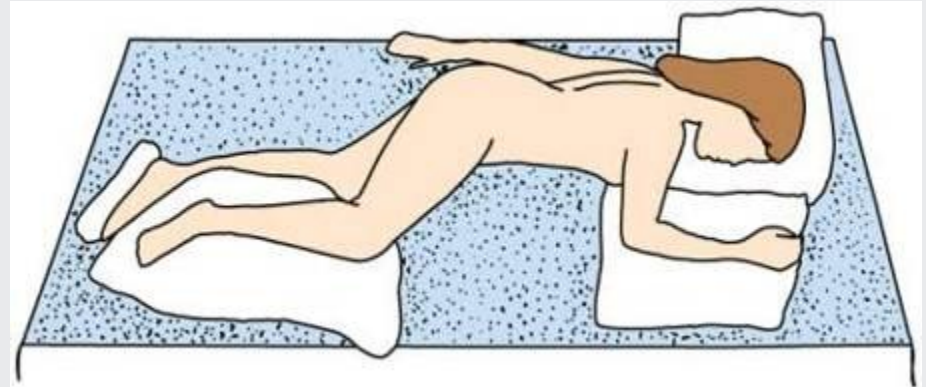
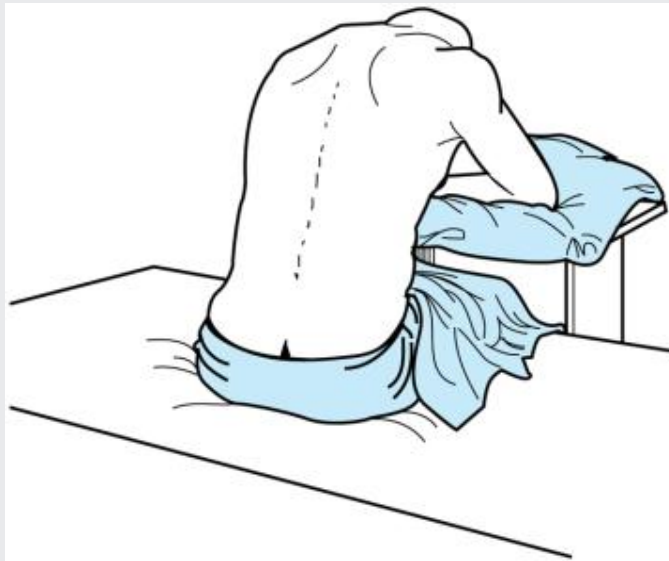
Skill 15-1: Step 9c



Positioning patients.



Skill 15-1: Steps 9e, 9f

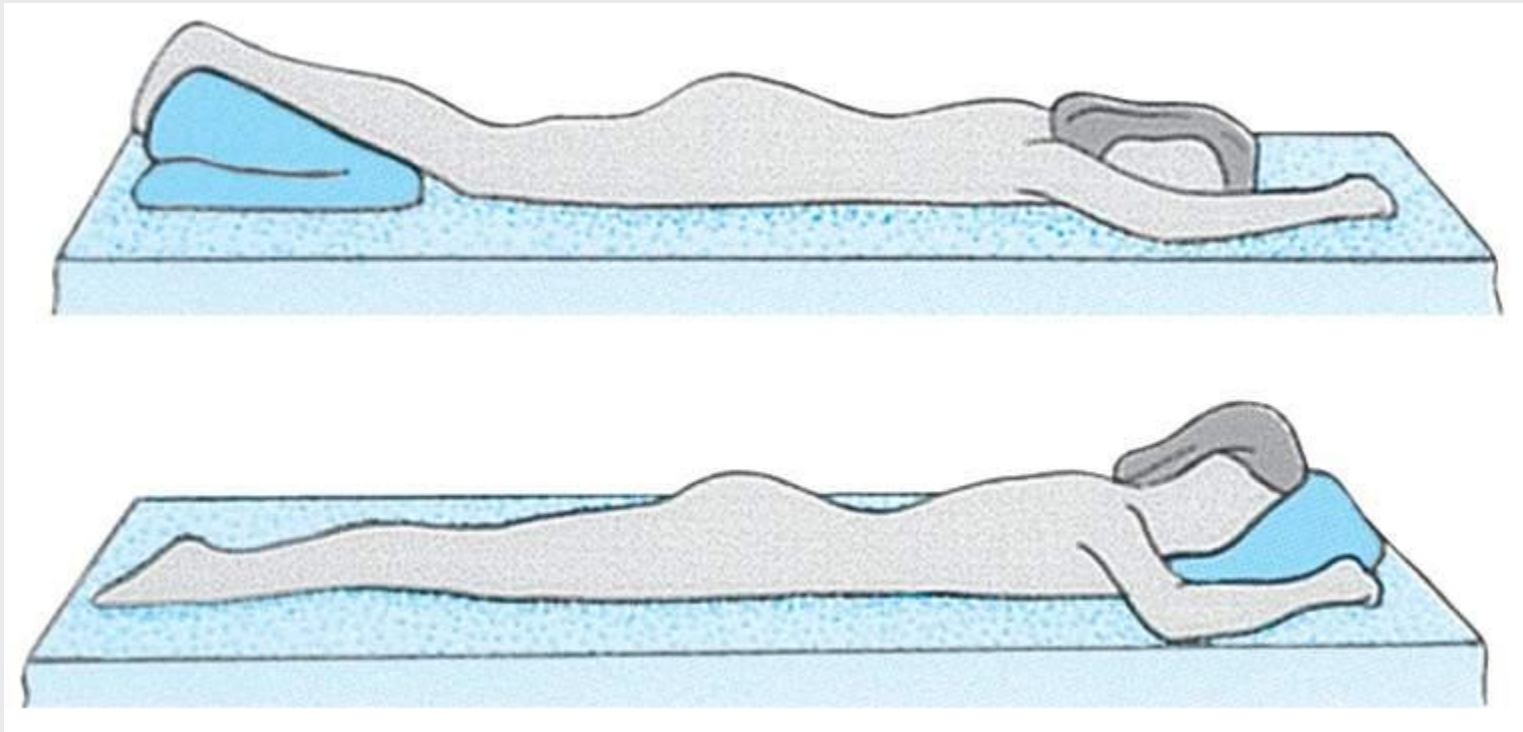


(From Elkin, M.K., Perry, A.G., Potter, P.A. [2004]. *Nursing interventions and clinical skills*. [3rd ed.]. St. Louis: Mosby.)

Positioning patients.



Skill 15-1: Step 9g

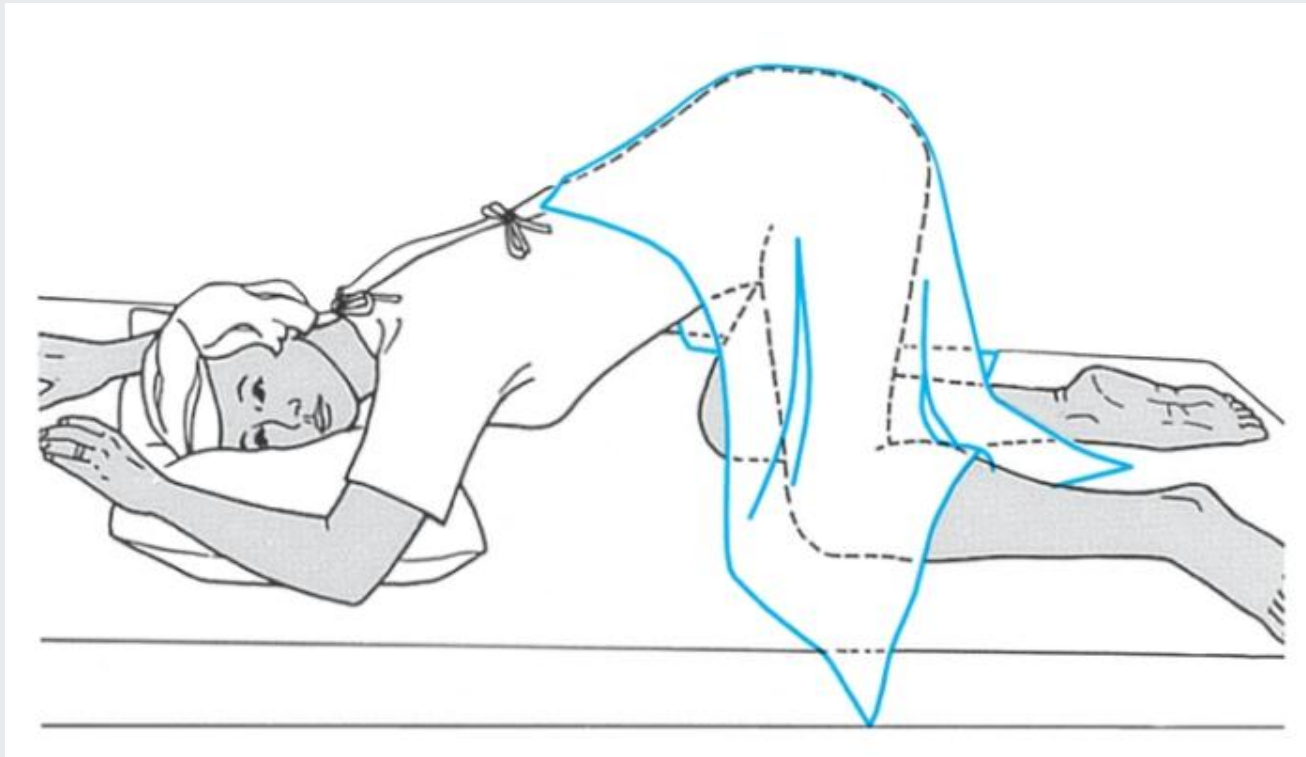


(From Potter, P.A., Perry, A.G. [2003]. *Basic nursing: Essentials for practice*. [5th ed.]. St. Louis: Mosby.)

Positioning patients.



Skill 15-1: Step 9h

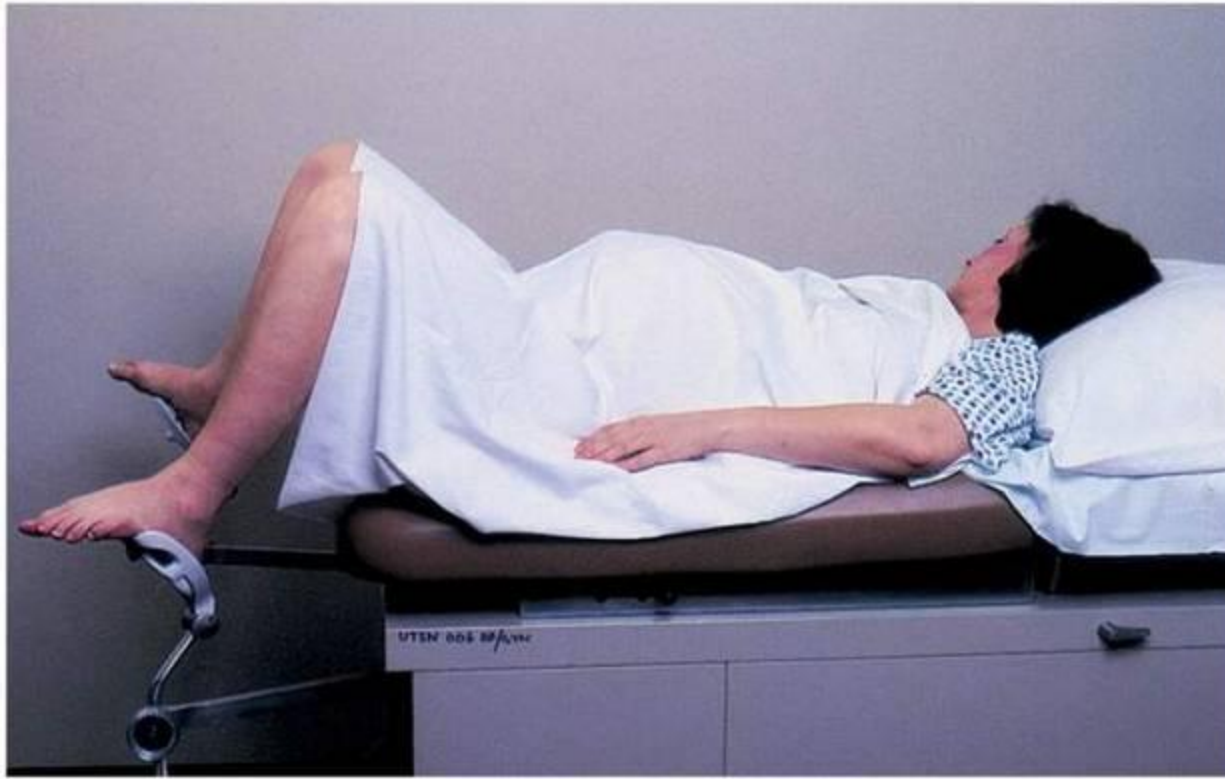


(From Potter, P.A., Perry, A.G. [2003]. *Basic nursing: Essentials for practice*. [5th ed.]. St. Louis: Mosby.)

Positioning patients.



Skill 15-1: Step 9i

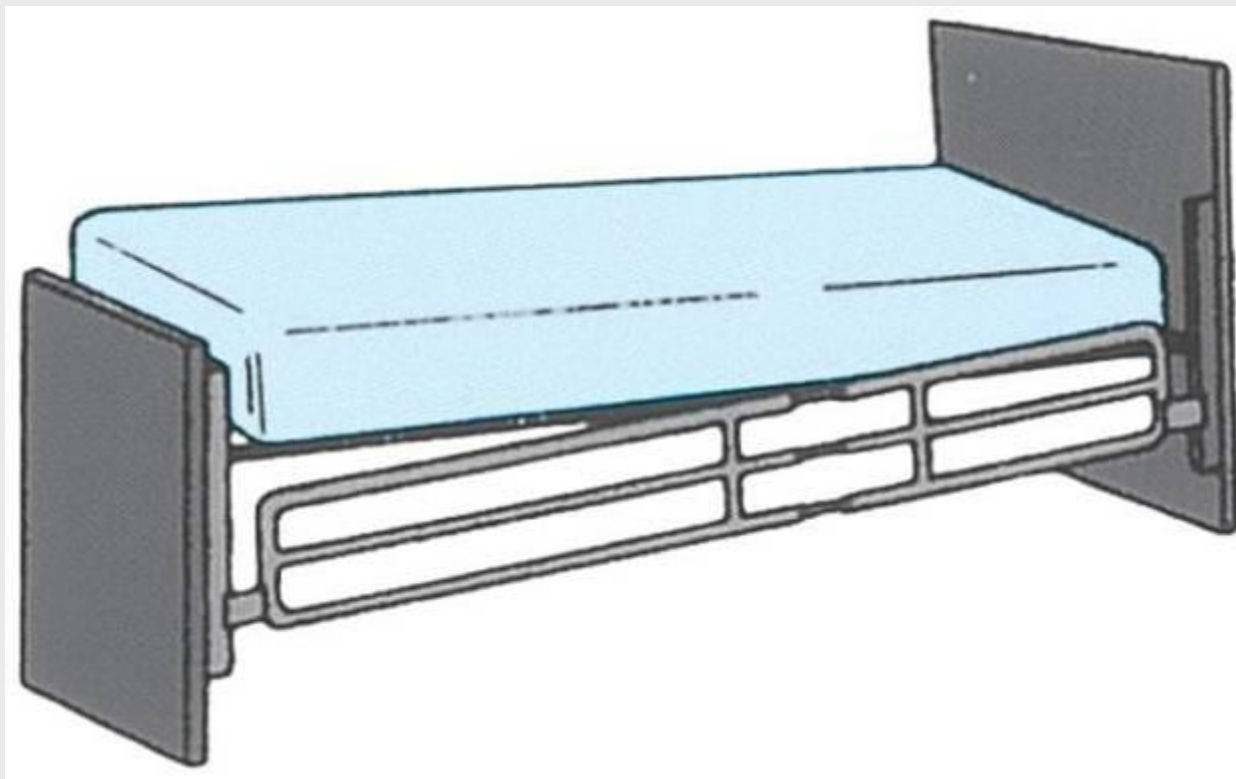


(From Seidel, H.M., Ball, J.W., Dains, J.E., Benedict, G.W. [2003]. *Mosby's guide to physical examination*. [5th ed.]. St. Louis: Mosby.)

Positioning patients.



Skill 15-1: Step 9j



Positioning patients.



Positioning Patients

- Semi-Fowler's
 - Head of bed raised approximately 30 degrees
- Orthopneic
 - Sitting up in bed at 90-degree angle, sometimes resting forward supported by pillow on overbed table
- Sims'
 - Lying on side with knee and thigh drawn upward toward chest
- Prone
 - Horizontal position when lying face down



Positioning Patients

- Knee-chest
 - Patient kneels; weight of body supported by knees and chest, with abdomen raised, head turned to one side, and arms flexed
- Lithotomy
 - Lying supine with hips and knees flexed and thighs abducted and rotated externally
- Trendelenburg
 - Head low and body and legs elevated on an incline



Mobility versus Immobility

- Mobility
 - A person's ability to move around freely in his or her environment
- Serves Many Purposes
 - Express emotion
 - Self-defense
 - Attain basic needs
 - Perform recreational activities
 - Perform activities of daily living (ADLs)
 - Maintain body's normal physiological activities



Mobility versus Immobility

- Immobility
 - Inability to move around freely
- Complications of Immobility
 - Muscle and bone atrophy; contractures; pressure ulcer
 - Constipation; urinary tract infection
 - Disuse osteoporosis; kidney stones
 - Pneumonia; pulmonary embolism; postural hypotension
 - Anorexia; insomnia
 - Asthenia
 - Disorientation



Figure 15-3



(From Potter, P.A., Perry, A.G. [2003]. *Basic nursing: Essentials for practice*. [5th ed.]. St. Louis: Mosby.)

Trochanter roll.



Figure 15-4



(From Potter, P.A., Perry, A.G. [2003]. *Basic nursing: Essentials for practice*. [5th ed.]. St. Louis: Mosby.)

Hand roll.



Performing Range-of-Motion Exercises

- Range-of-Motion (ROM)
 - Any body action involving the muscles and joints in natural directional movements
- Exercises may be performed by physical therapy department personnel or by the nurse and allied staff.
- Exercises are indicated for patients confined to bed for long periods.
- Exercises may be performed passively by nurses or actively by patients.



Performing Range-of-Motion Exercises

- The total amount of activity required to prevent physical disuse syndrome is only about 2 hours for every 24-hour period.
- Designated body joints are moved to the point of resistance or pain, using care to avoid injury.



Performing Range-of-Motion Exercises

- Joint Range-of-Motion Exercises
 - Neck and cervical spine
 - Flexion
 - Extension
 - Hyperextension
 - Lateral flexion
 - Rotation



Performing Range-of-Motion Exercises

- Joint Range-of-Motion Exercises
 - Shoulder
 - Flexion
 - Extension
 - Hyperextension
 - Abduction
 - Adduction
 - Internal rotation
 - External rotation
 - Circumduction



Performing Range-of-Motion Exercises

- Joint Range-of-Motion Exercises
 - Elbow
 - Flexion
 - Extension
 - Hyperextension
 - Forearm
 - Supination
 - Pronation



Performing Range-of-Motion Exercises

- Joint Range-of-Motion Exercises
 - Wrist
 - Flexion
 - Extension
 - Hyperextension
 - Radial flexion
 - Ulnar flexion



Performing Range-of-Motion Exercises

- Joint Range-of-Motion Exercises
 - Fingers
 - Flexion
 - Extension
 - Hyperextension
 - Abduction
 - Adduction



Performing Range-of-Motion Exercises

- Joint Range-of-Motion Exercises
 - Thumb
 - Flexion
 - Extension
 - Abduction
 - Adduction
 - Opposition



Performing Range-of-Motion Exercises

- Joint Range-of-Motion Exercises
 - Hip
 - Flexion
 - Extension
 - Hyperextension
 - Abduction
 - Adduction
 - Internal rotation
 - External rotation
 - Circumduction

Skill 15-2: Step 8



(From Elkin, M.K., Perry, A.G., Potter, P.A. [2004]. *Nursing interventions and clinical skills*. [3rd ed.]. St. Louis: Mosby.)

Performing range-of-motion exercises.



Performing Range-of-Motion Exercises

- Joint Range-of-Motion Exercises
 - Knee
 - Flexion
 - Extension
 - Ankle
 - Dorsiflexion
 - Plantar flexion
 - Foot
 - Inversion
 - Eversion



Performing Range-of-Motion Exercises

- Joint Range-of-Motion Exercises
 - Toes
 - Flexion
 - Extension
 - Abduction
 - Adduction



Moving the Patient

- Moving includes lifting the patient up into bed, to the side of the bed, to the tub, and into a car.
- Moving also includes turning, dangling, and assisting the patient in and out of the bed for ambulation.
- Mechanical Equipment for Lifting Patients
 - Hydraulic lift
 - Roller board
 - Gurney lift



Figure 15-5



(From Potter, P.A., Perry, A.G. [2003]. *Basic nursing: Essentials for practice*. [5th ed.]. St. Louis: Mosby.)

Patient using a trapeze bar.

Figure 15-6, A-C



(From Sorrentino, S.A. [2004]. *Assisting with patient care*. [2nd ed.]. St. Louis: Mosby.)

A, The lift is over the patient. **B**, The sling is attached to a swivel bar.
C, The lift is raised until the sling and patient are off of the bed.



Figure 15-6, D-E



D



E

(From Sorrentino, S.A. [2004]. *Assisting with patient care*. [2nd ed.]. St. Louis: Mosby.)

D, The patient's legs are supported as the patient and lift are moved away from the bed. **E**, The patient is guided into a chair.



Moving the Patient

- Lift twice
 - Once mentally and then once physically
- Be certain to have sufficient assistance.
- Assess patient's ability to assist with moving.
- If moving may be painful for the patient, the nurse will want to administer medication to the patient before any such activity.



Skill 15-3: Steps 9g(2), 9g(4)



(From Elkin, M.K., Perry, A.G., Potter, P.A. [2004]. *Nursing interventions and clinical skills*. [3rd ed.]. St. Louis: Mosby.)

(From Sorrentino, S.A. [2004]. *Assisting with patient care*. [2nd ed.]. St. Louis: Mosby.)

Moving the patient.



Skill 15-3: Step 12e



(From Sorrentino, S.A. [2004]. *Assisting with patient care*. [2nd ed.]. St. Louis: Mosby.)

Moving the patient.



Skill 15-3: Steps 13c, 13f



(From Potter, P.A., Perry, A.G. [2003]. *Basic nursing: Essentials for practice*. [5th ed.]. St. Louis: Mosby.)

Moving the patient.

Skill 15-3: Step 13j(7)



(From Sorrentino, S.A. [2004]. *Assisting with patient care*. [2nd ed.]. St. Louis: Mosby.)

Moving the patient.



Skill 15-3: Step 13j(8)



(From Sorrentino, S.A. [2004]. *Assisting with patient care*. [2nd ed.]. St. Louis: Mosby.)

Moving the patient.

Skill 15-3: Step 14f



(From Elkin, M.K., Perry, A.G., Potter, P.A. [2004]. *Nursing interventions and clinical skills*. [3rd ed.]. St. Louis: Mosby.)

Moving the patient.



Using the Lift for Moving Patients

- Mechanical devices, such as the hydraulic lift used with a Hoyer sling, will
 - Move patients safely
 - Protect the nurse's back
 - Provide full-weight lifting of patients who cannot assist



Nursing Process

- Nursing Diagnosis
 - Impaired physical mobility