Chapter 23

Body Mechanics, Positioning, and Moving
Question

- Is the following statement true or false?

  Good body posture distributes gravity through the center of the body over a wide base of support.
True.

Good body posture distributes gravity through the center of the body over a wide base of support. A poor posture often results in muscle spasms.
• Inactivity leads to deterioration of health
  
  – Disuse syndrome: signs and symptoms resulting from inactivity in as little as 24 hours
# Dangers of Inactivity

<table>
<thead>
<tr>
<th>SYSTEMS</th>
<th>EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muscular</td>
<td>Weakness</td>
</tr>
<tr>
<td></td>
<td>Decreased tone/strength</td>
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<tr>
<td></td>
<td>Decreased size (atrophy)</td>
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<tr>
<td>Skeletal</td>
<td>Poor posture</td>
</tr>
<tr>
<td></td>
<td>Contractures</td>
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<td></td>
<td>Foot drop</td>
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<td>Cardiovascular</td>
<td>Impaired circulation</td>
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<td>Thrombus (clot) formation</td>
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<td></td>
<td>Dependent edema</td>
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<tr>
<td>Respiratory</td>
<td>Pooling of secretions</td>
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<td></td>
<td>Shallow respirations</td>
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<td></td>
<td>Atelectasis (collapsed alveoli)</td>
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<td>Urinary</td>
<td>Oliguria (scanty urine)</td>
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<td>Urinary tract infections</td>
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<td>Calculi (stone) formation</td>
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<td>Incontinence (inability to control elimination)</td>
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<td>Gastrointestinal</td>
<td>Anorexia (loss of appetite)</td>
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<td>Constipation</td>
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<td>Fecal impaction</td>
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<td>Integumentary</td>
<td>Pressure sores</td>
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<td>Endocrine</td>
<td>Decreased metabolic rate</td>
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<tr>
<td></td>
<td>Decreased hormonal secretions</td>
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<tr>
<td>Central nervous</td>
<td>Sleep pattern disturbances</td>
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<td>Psychosocial changes</td>
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Maintaining Good Posture

- Good posture affects a person’s appearance, stamina, and ability to use the musculoskeletal system efficiently
- Poor posture often results in muscle spasms
Maintaining Good Posture (cont’d)
Standing Posture
Question

• Which type of mattress provides minimal pressure reduction?
  
a. Water
b. Static air
c. Egg-crate foam
d. Gel
c. Egg-crate foam

Egg-crate foam mattress provides minimal pressure reduction. A water mattress supports the body and equalizes the pressure per square inch over its surface. A static air pressure mattress suspends the client on a buoyant surface, distributing the pressure on the underlying tissue. Gel is an alternative substance used to fill cushions and mattresses.
**Sitting Posture**

- Correct sitting posture
  - Buttocks and thighs base of support
  - Both feet rest on floor
  - Knees bent and clear of chair edge

(Refer to Figure 23-3 in the textbook.)
Lying-Down Posture

- Good lying-down posture
  - Head, neck centered between shoulders
  - Shoulders level; arms, hips, knees slightly flexed
  - Trunk straight; hips level; legs parallel; feet at right angles to legs

(Refer to Figure 23-4 in the textbook.)
Body Mechanics

- Proper body mechanics
  - Increase muscle effectiveness
  - Reduce fatigue
  - Avoids repetitive strain injuries
Ergonomics

- Definition: special field of engineering science devoted to the promotion of comfort, performance, and health in the workplace
  - Example: using assistive devices to lift or transport heavy items or clients; using alternative equipment for repetitive tasks
Positioning Clients

- General principles for positioning
  - Change the inactive client’s position at least every 2 hours
  - Enlist the assistance of at least one other caregiver
  - Remove pillows and positioning devices
Positioning Clients (cont’d)

- Common positions
  - Supine position
    - Foot drop: permanent dysfunctional position caused by shortening of the calf muscles and lengthening of the opposing muscles on the anterior leg
Foot Drop
Positioning Clients (cont’d)

- Common positions (cont’d)
  - Lateral
  - Lateral oblique
  - Prone
  - Sims’ and Fowler’s
Common Positions

A

B

C

D

E

F

Mid Fowler's—45° angle

High Fowler's—60°–90° angle

Low Fowler's—30° angle
Question

• In what position should the infant be placed to reduce the incidence of sudden infant death syndrome?
  
a. Lateral
b. Supine
c. Prone
d. Sims’
Answer

b. Supine

The infant should be placed in supine position to reduce the incidence of sudden infant death syndrome. Lateral position, prone position, and Sims’ position are not recommended to reduce sudden infant death syndrome.
Positioning Clients (cont’d)

- Positioning devices
  - Adjustable bed
  - Mattress
  - Bed board (rigid structure placed under a mattress)
  - Pillows
  - Roller sheets
Adjustable Bed
Positioning Clients (cont’d)

- Turning and moving clients
  - Assistive devices and additional caregivers are needed when turning or moving a client who cannot change from one position to another independently
Trochanter Rolls
Foot Boards, Boots, and Foot Splints
Trapeze
Question

• Which positioning device is foundational for good body alignment?
  a. Mattress
  b. Adjustable bed
  c. Pillow
  d. Roller sheet
Answer

a. Mattress

A positioning device foundational for good body alignment is a mattress. Adjustable beds allow changes in head and knee position. Pillows are used to support and elevate a body part. A roller sheet that extends from the upper back to midthighs is used to slide and roll the client.
Protective/Pressure-Relieving Devices

- Side rails
- Mattress overlays
  - Foam and gel mattresses
  - Static air mattress
  - Alternating air mattress
  - Water mattress
Protective/Pressure-Relieving Devices (cont’d)

• Cradle: metal frame secured to or placed on top of the mattress to protect feet and lower legs from bed linens

• Specialty beds
  - Low air loss
  - Air fluidized
  - Oscillating support
  - Circular bed
Oscillating Bed

- Slowly, continuously rocks from side to side in 124-degree arc
  - Relieves skin pressure
  - Helps mobilize respiratory secretions

(Refer to Figure 23-18 in the textbook.)
Circular Bed
Transferring Clients

- Examples of transferring aids
  - Transfer handle
  - Transfer belt
  - Transfer boards
  - Mechanical lift
Nursing Implications

- Nursing diagnoses for inactive clients
  - Impaired physical mobility
  - Risk for injury
  - Risk for disuse syndrome
  - Risk for perioperative-positioning injury
  - Impaired bed mobility
General Gerontologic Considerations

- Older adults
  - Need to maintain as much mobility as possible to prevent disability
  - Require extra time and assistance during positioning, transferring, and ambulating
  - Instructions should be given using clear, simple words; make one request at a time