

Body mechanics



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Body mechanics

Body mechanics is the coordinated effort of the musculo- skeletal and nervous system to maintain balance, posture and body alignment during lifting, moving, positioning and performing activities of daily living

Purpose of Body mechanics

- **Reducing risk of injury to the musculo-skeletal system.**
- **Facilitating body movement without muscle strain and excessive use of muscle energy.**
- **Maintaining adequate muscle tone; thus contributing to balance of the body.**
- **Preventing fatigue and deformities e.g. kyphosis, lordosis.**
- **Promoting physiological functions of the body as it aids in circulation and digestion.**
- **Reduce the energy required.**



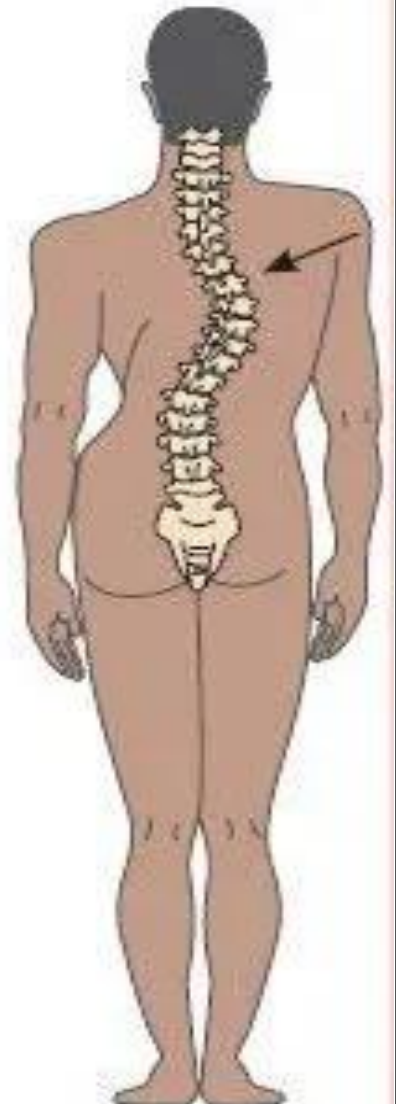
Normal



Kyphosis



Lordosis



Scoliosis



Note

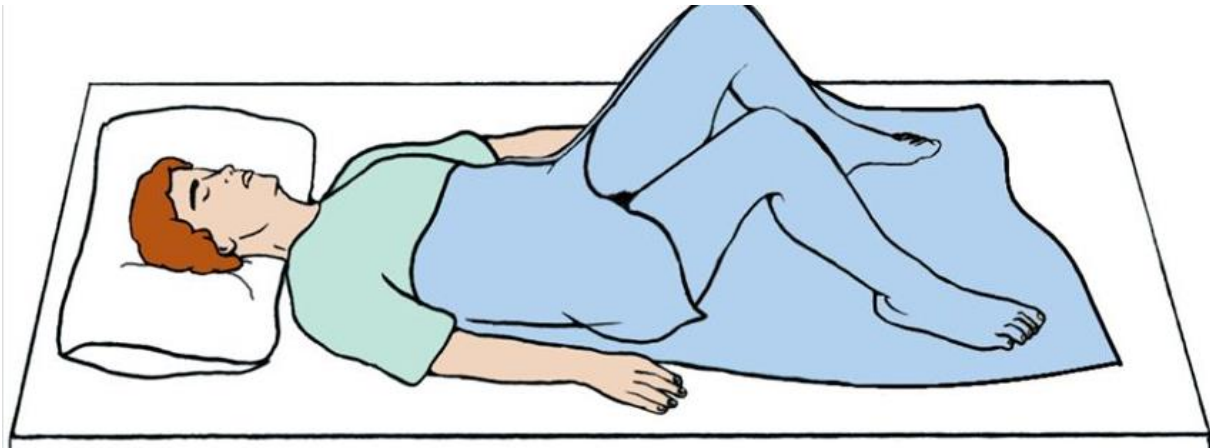
Positioning a client in good body alignment and changing the position regularly (every 2 hours**) and systematically are essential aspects of nursing practice.**

Types of patient positions

- **Dorsal position.**
- **Supine position.**
- **Sitting position.**
- **Knee-Chest position**
- **Sims position.**
- **Prone position.**
- **Fowler position.**
- **Trendelenburg position**

Dorsal position

- **Back-lying position with knees flexed and hips externally rotated. small pillow under the head and soles of feet on the surface.**



Dorsal position

Indication

Used to assessed area

- **Female genitals**
- **Rectum**
- **female reproductive tract**

**contraindicated for client who have
cardiopulmonary problems**

Supine position

Back-lying position with legs extended; with or without pillow under the head.

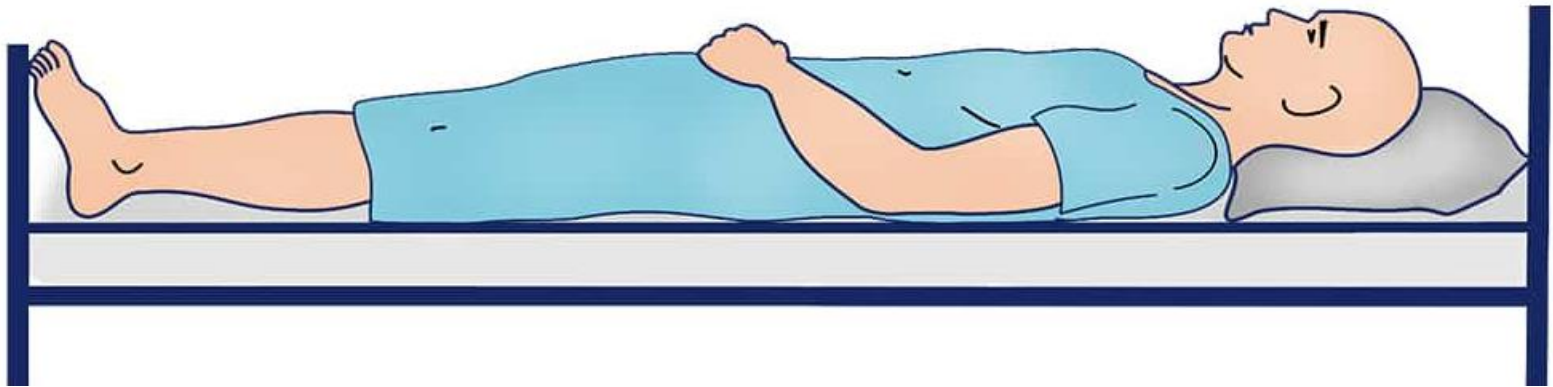
Indication

To assessed: head, neck, axillae, anterior thorax, lungs, breasts, heart ,vital signs, abdomen, extremities, peripheral pulses

Continue

Contraindication:

Tolerated poorly by clients with cardiovascular and respiratory problems



Sitting position

A seated position, back unsupported and legs hanging freely used to remove weight from the feet

Indication: to assessed

Head, neck, posterior and anterior thorax, lungs, breasts, axillae, heart, vital signs, upper and lower extremities reflexes.

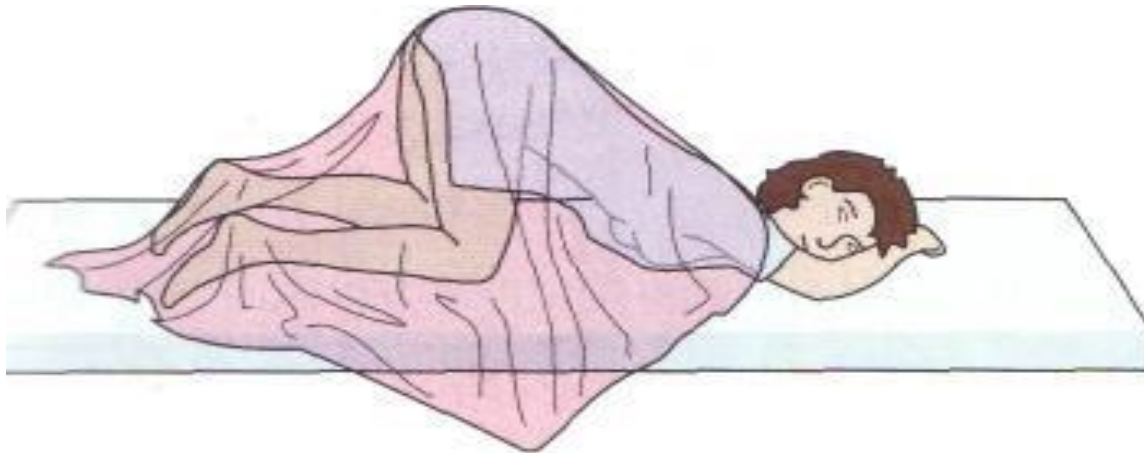
- **Older adults and weak clients may require support.**

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Knee-Chest position

rest on knee and chest , head turned to one side



Indication

1. To exam urethra and vagina.
2. To exam rectum

Sims position

Side-lying position with lowermost, arm behind the body, uppermost leg flexed at hip and knee, upper arm flexed at shoulder and elbows.

- 1. Used for rectal examinations**
- 2. Used for vaginal examinations**

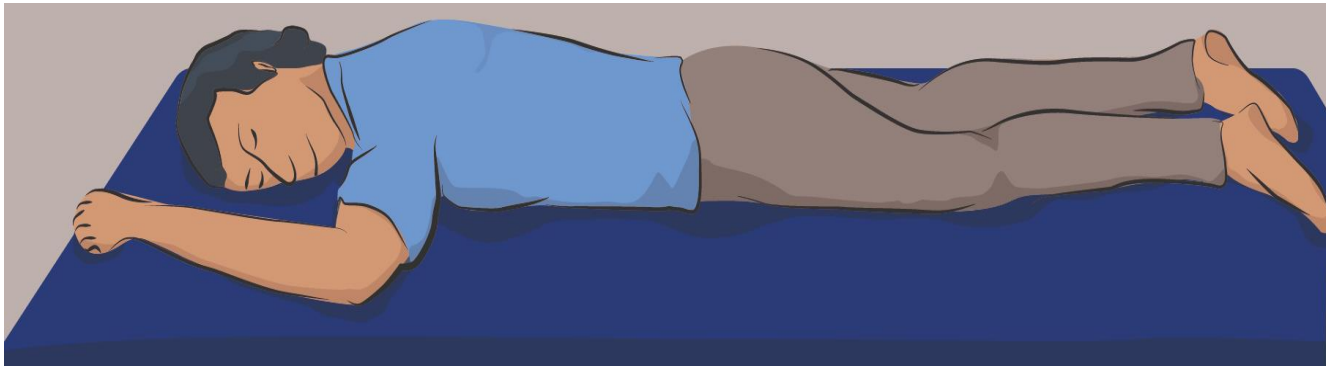
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**Difficult for older adults and
people with limited joint
Movement**



Prone position

Lies on abdomen with head turned to the side, with or without a small pillow



Avoid prone position

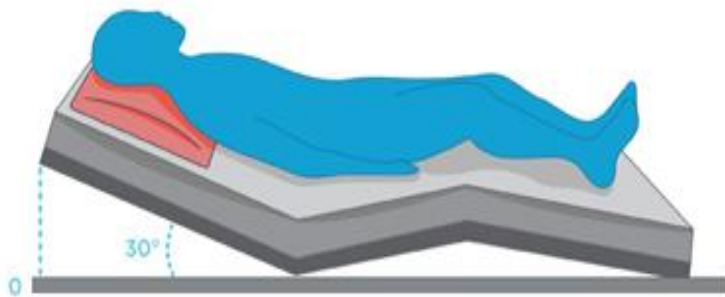
- **Pregnancy**
- **Cardiac surgery**
- **Avoid prone position for an hour after meals**

Fowler's position

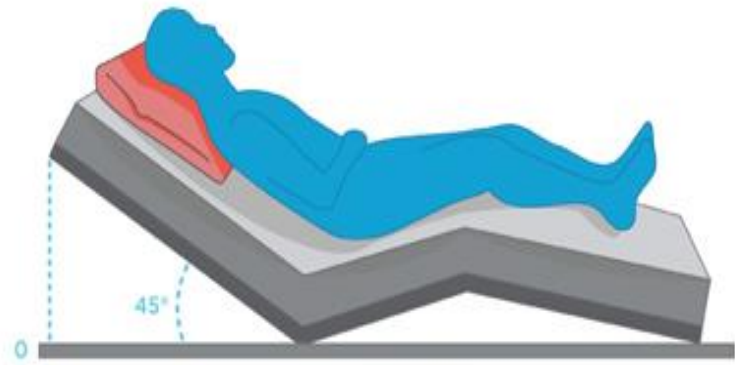
- **Fowler's position includes angles between 30 and 90 degrees.**
- **Fowler's position is used in nursing to promote oxygenation to allow for maximum chest expansion, minimizing abdominal muscular tension and minimizing the effects of gravity on the chest wall.**

There are several Fowler's positions

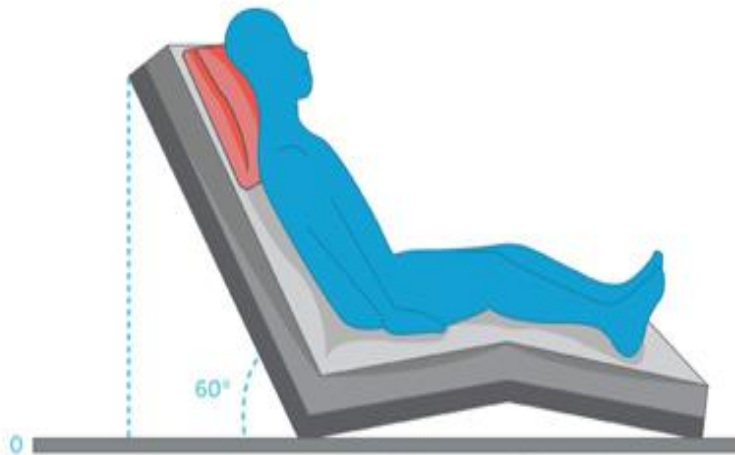
- **Low Fowler's position: head of the bed raised 15-30 degrees**
- **Semi Fowler's position: head of the bed raised 30-45 degrees**
- **Standard Fowler's position: head of the bed raised 45-60 degrees**
- **High Fowler's position (Full Fowler's position): head of the bed raised between 60 and 90 degrees.**



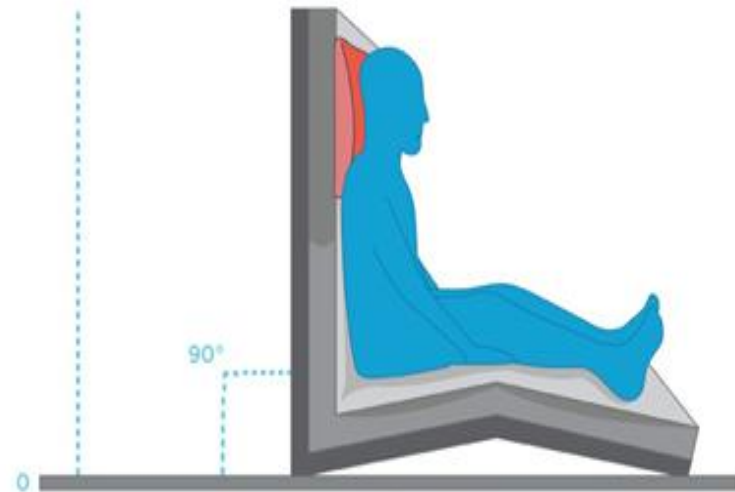
Low-Fowler's: Head of the bed raised 15-30 degrees



Semi-Fowler's: Head of the bed raised 30-45 degrees



Standard-Fowler's: Head of the bed raised 45-60 degrees



High/Full-Fowler's: Head of the bed raised 90 degrees

Trendelenburg position

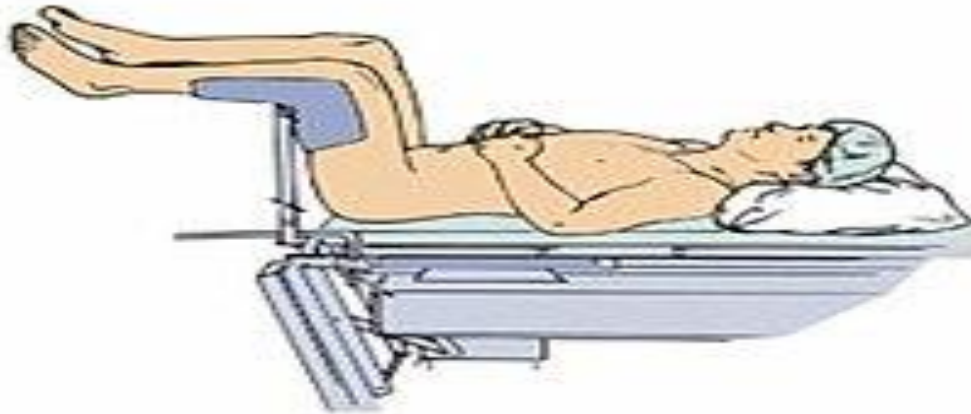
lies flat on his back and elevate the lower part of the body.

help reverse hypotension, treat low cardiac output, insert central IV catheters, to reduce leg swelling



lithotomy position

lithotomy position is often used during childbirth and surgery in the pelvic area.



Complications of Immobility

Respiratory: respiratory tract infections, atelectasis, and pulmonary embolism¹



Neurological: depression, anxiety, forgetfulness, and confusion¹



Cardiovascular: postural hypotension, cardiac muscle atrophy, orthostatic intolerance, and deep vein thrombosis¹



Musculoskeletal: osteoporosis, muscle atrophy and weakness, and contractures³



Hematologic: anemia¹



Renal: calculi²



Metabolic: glucose intolerance²



Skin: pressure ulcers³



Gastrointestinal: constipation and fecal impaction²

