

**Physiotherapy 6thsemester 3<sup>rd</sup> year**  
**Postural Drainage**

**By**

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- *Postural drainage (bronchial drainage)*, another intervention for airway clearance, is a means of mobilizing secretions in one or more lung segments to the central airways by placing the patient in various positions so gravity assists in the drainage process
- When secretions are moved from the smaller to the larger airways, they are then cleared by coughing or endotracheal suctioning
- *Postural drainage therapy also includes the use of manual techniques*, such as percussion, shaking, and vibration, coupled with voluntary coughing.

# Indications for Postural Drainage

- ❑ **Prevent Accumulation of Secretions in Patients at Risk for Pulmonary Complications in**
  - chronic bronchitis
  - cystic fibrosis
  - Patients who are on prolonged bed rest
  - Patients who have received general anesthesia
  - Any patient who is on a ventilator if he or she is stable enough to tolerate the treatment

# Indications for Postural Drainage

## ❑ Remove Accumulated Secretions from the Lungs in

- Patients with acute or chronic lung disease, such as
- pneumonia,
- atelectasis,
- acute lung infections,
- COPD
- Patients who are generally very weak or are elderly
- Patients with artificial airways

# Contraindications to Postural Drainage

1. Severe hemoptysis
2. Untreated acute conditions
  - Severe pulmonary edema
  - Congestive heart failure
  - Large pleural effusion
  - Pulmonary embolism
  - Pneumothorax

# Contraindications to Postural Drainage

## 4. Cardiovascular instability

- Cardiac arrhythmia
- Severe hypertension or hypotension
- Recent myocardial infarction
- Unstable angina

# Contraindications to Postural Drainage

5. Conditions that may cause increased in intracranial Pressure.

- Recent neurosurgery
- Head injuries
- CVA

6. Oesophagogastrrectomy

7. during filling phase of peritoneal dialysis

8. Facial burns

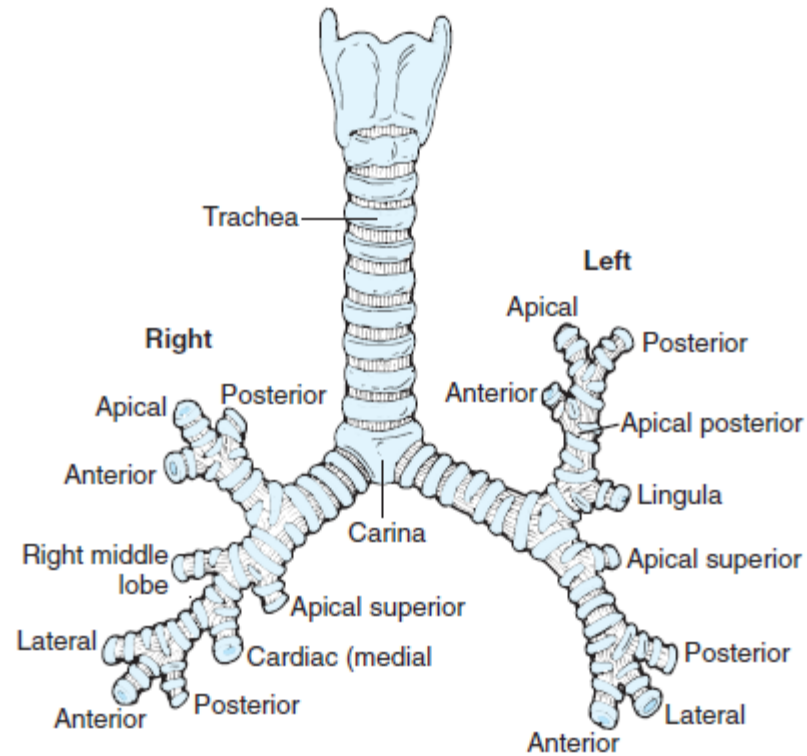
9. facial oedema

# Manual Techniques Used with Postural Drainage Therapy

- **deep breathing**, and an **effective cough** to facilitate airway clearance
- **Percussion**
- **Vibration**
- **Shaking**



# Bronchopulmonary segment.



# Postural Drainage Positions

- Positions for postural drainage are based on the anatomy of the lungs and the tracheobronchial tree.
- Each segment of each lobe is drained using the positions depicted in Figures 25.26 through 25.37
- The shaded area in each illustration indicates the area of the chest wall where percussion or vibration is applied.

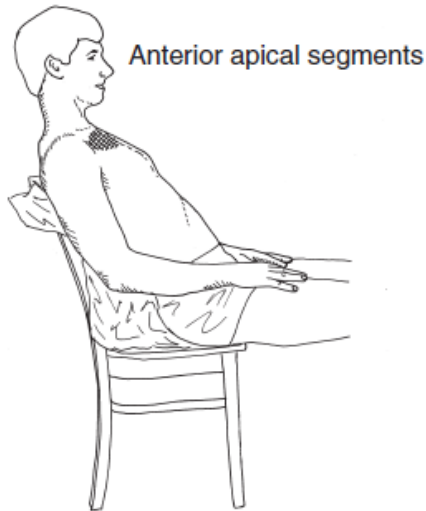
# Preparation for Postural Drainage

- Loosen tight or bulky clothing.
- It is not necessary to expose the skin.
- The patient may wear a lightweight shirt or gown.
- Have a sputum cup or tissues available.
- Have sufficient pillows for positioning and comfort.
- Explain the treatment procedure to the patient.
- Teach the patient deep breathing and an effective cough prior to beginning postural drainage.

# Preparation for Postural Drainage

- If the patient is producing copious amounts of sputum, instruct the patient to cough a few times or have the patient suctioned prior to positioning.
- Make any adjustments of tubes and wires, such as chest tubes, electrocardiography wires, or catheters, so they remain clear during positioning.

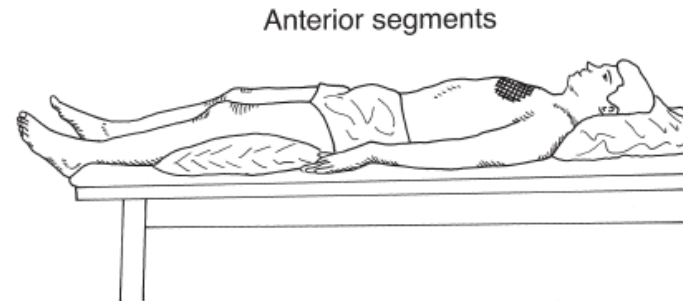
# RIGHT AND LEFT UPPER LOBES



**FIGURE 25.26** Percussion is applied directly under the clavicle.

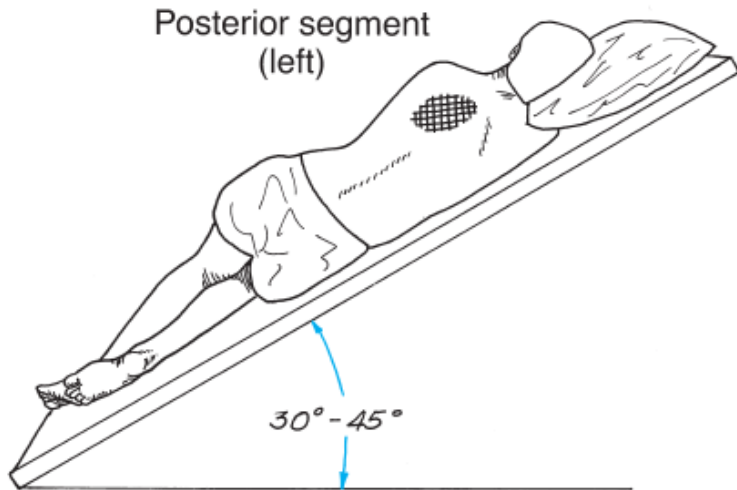


**FIGURE 25.27** Percussion is applied above the scapulae. Your fingers curve over the top of the shoulders.

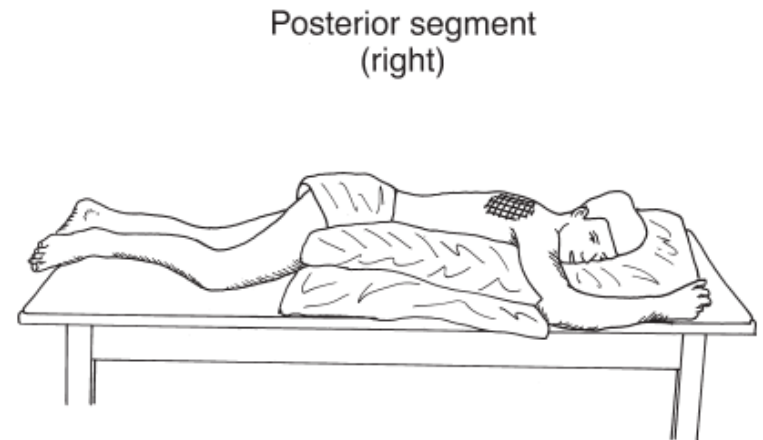


**FIGURE 25.28** Percussion is applied bilaterally, directly over the nipple or just above the breast.

# RIGHT AND LEFT UPPER LOBES

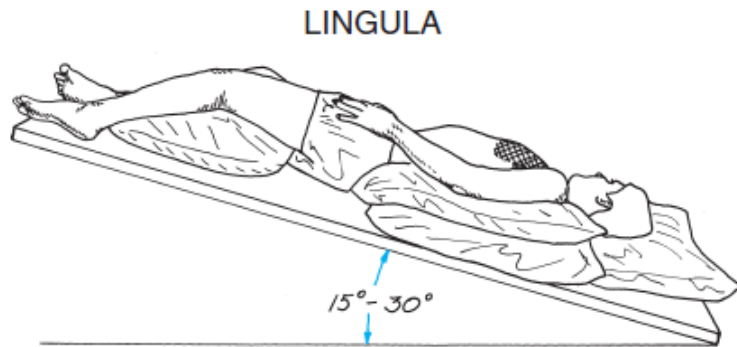


**FIGURE 25.29** Patient lies one-quarter turn from prone and rests on the right side. Head and shoulders are elevated 45° or approximately 18 inches if pillows are used. Percussion is applied directly over the left scapula.

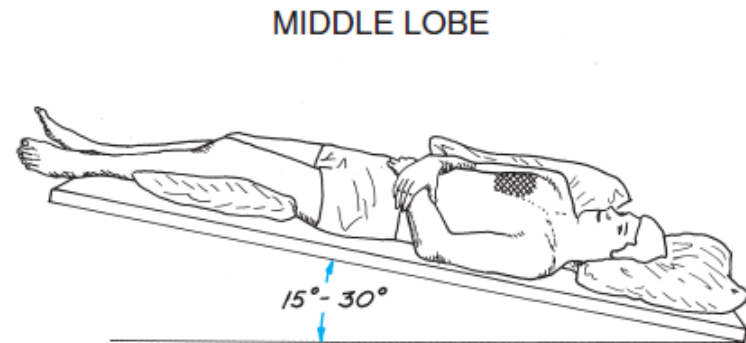


**FIGURE 25.30** Patient lies flat and one-quarter turn from prone on the left side. Percussion is applied directly over the right scapula.

# LEFT AND RIGHT LUNG

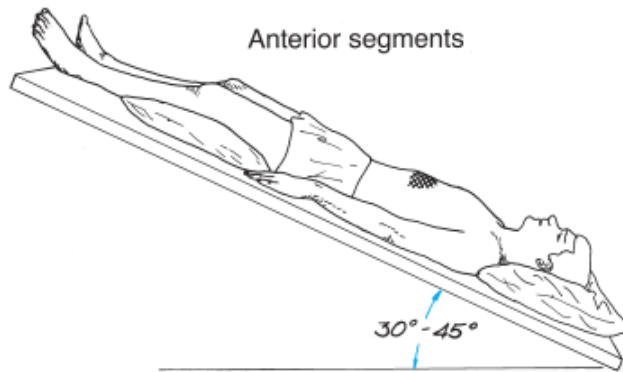


**FIGURE 25.31** Patient lies one-quarter turn from supine on the right side, supported with pillows and in a 30° head-down position. Percussion is applied just under the left breast.

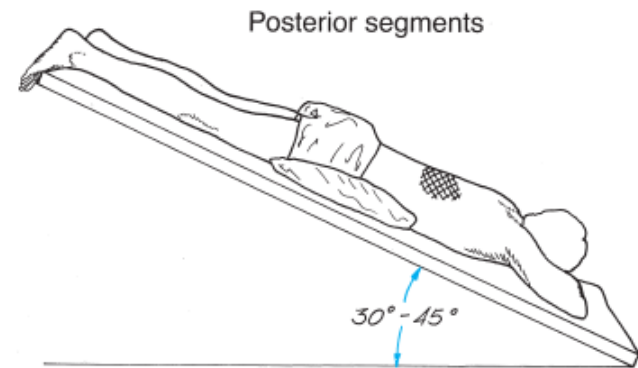


**FIGURE 25.32** Patient lies one-quarter turn from supine on the left side, supported with pillows behind the back, and in a 30° head-down position. Percussion is applied under the right breast.

# RIGHT AND LEFT LOWER LOBES



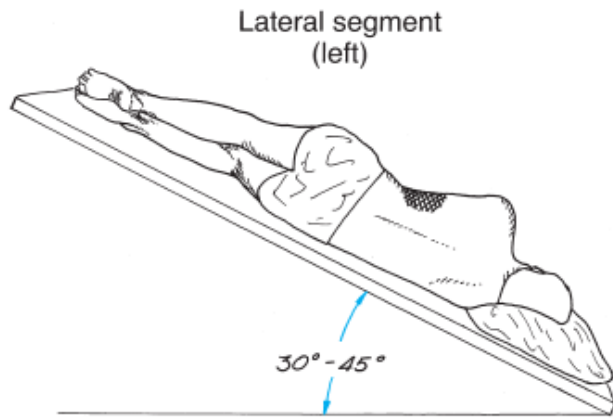
**FIGURE 25.33** Patient lies supine, pillows under knees, in a 45° head-down position. Percussion is applied bilaterally over the lower portion of the ribs.



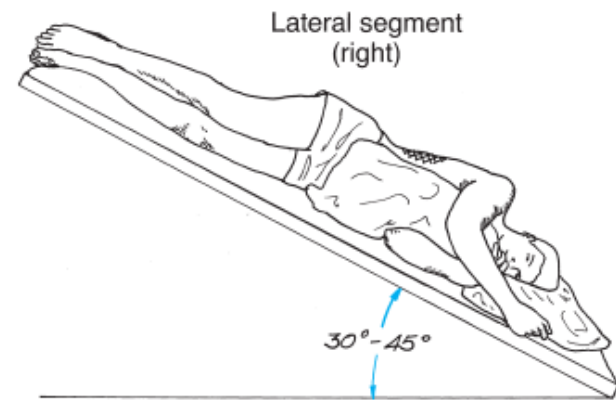
**FIGURE 25.34** Patient lies prone with a pillow under the abdomen in a 45° head-down position. Percussion is applied bilaterally over the lower portion of the ribs.



# RIGHT AND LEFT LOWER LOBES

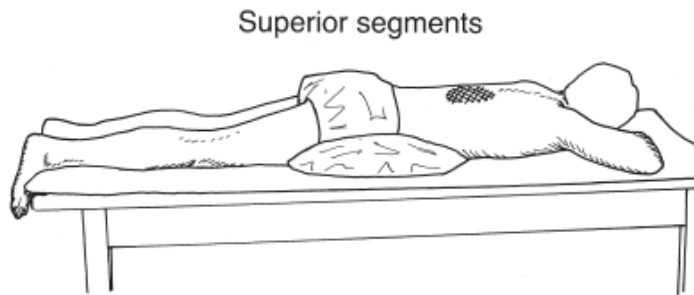


**FIGURE 25.35** Patient lies on the right side in a 45° head-down position. Percussion is applied over the lower lateral aspect of the left rib cage.



**FIGURE 25.36** Patient lies on the left side in a 45° head-down position. Percussion is applied over the lower lateral aspect of the right rib cage.

# RIGHT AND LEFT LOWER LOBES



**FIGURE 25.37** Patient lies prone with a pillow under the abdomen to flatten the back. Percussion is applied bilaterally, directly below the scapulae.

# Notes

## □ The patient may be positioned

- on a postural drainage table that can be elevated at one end.
- a tilt table.
- a reinforced padded table with a lift.
- or a hospital bed.
- A small child can be positioned on a therapist's or parent's lap.

# Notes

- Do not do very soon after meal
- Early in the morning or late in the evening
- If secretions are thick and copious, two to four times per day may be necessary until the lungs are clear.
- Check the patient's vital signs and breath sounds.
- Position the patient in the correct position for drainage. See that he or she is as comfortable and relaxed as possible.

# Notes

- Stand in front of the patient, whenever possible, to observe his or her color.
- Maintain each position for 5 to 10 minutes if the patient can tolerate it or as long as the position is productive.
- Have the patient breathe deeply during drainage but do not allow the patient to hyperventilate or become short of breath. Pursed-lip breathing during expiration is sometimes used.
- Apply percussion over the segment being drained while the patient is in the correct position.

# Notes

- If the patient does not cough spontaneously during positioning with percussion, instruct the patient to take several deep breaths or huff several times in succession as you apply vibration during expiration. This may help elicit a cough.
- If the patient's cough is not productive after 5 to 10 minutes of positioning, go on to the next position.
- Secretions that have been mobilized during a treatment may not be coughed up by the patient until 30 minutes to 1 hour after treatment.

# Notes

- The duration of any one treatment should not exceed 45 to 60 minutes, as the procedure is quite fatiguing for the patient.
- Have the patient sit up slowly and rest for a short while after the treatment.
- Watch for signs of postural hypotension when the patient rises from a supine position or from a head-down position to sitting.
- Advise the patient that even if the cough was not productive during treatment it may be productive a short while after treatment.

# Notes

- Evaluate the effectiveness of the treatment by reassessing breath sounds.
- Note the type, color, consistency, and amount of secretions produced.
- Check the patient's vital signs after treatment and note how the patient tolerated the treatment.



**THANK YOU**