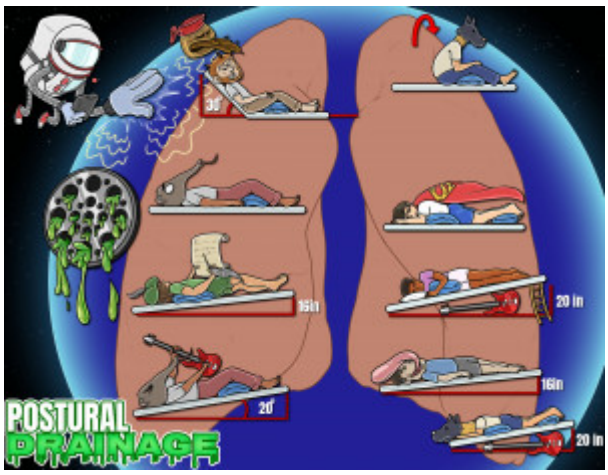
Postural Drainage

Postural drainage is a series of positions utilized to aid in the removal of various secretions from the lungs and bronchus. Optimal positioning is based upon the specific area on the lungs that the secretions, usually mucus, are located. Patients are then placed on an adjustable table or bed with the affected segments perpendicular to the ground so that gravity can assist with drainage. Therapists should ensure that patients do not suffer from various conditions such as rib fractures, musculoskeletal arthritis, or pulmonary hypertension that may contraindicate patient participation in postural drainage.



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Mechanism of Action

Gravity

Gravity-astronaut

Gravity and positioning are crucial to successful mucus/secretion removal. Postural drainage of mucus/secretions is accomplished by lining up the targeted segment of the lung so that it is 90 degrees, or perpendicular, from the ground. From this position gravity will assist the mucociliary transport system and allow for clearance of the lungs.

Percussion

Percuss

Percussion is a force that requires rhythmic motion via cupped hands by the physical therapist. This rhythmic force is applied to the chest wall of the patient for approximately 3 to 5 minutes at each targeted lung site. Percussion is used in conjunction with gravity to loosen and remove secretions from the lungs with greater probability. The exact force applied is highly dependent on the patient with some populations, such as those with rib fractures, osteoporosis, or decreased platelet counts, requiring either no force at all or a lighter force.

Vibration

Vibration

During expiration, a therapist may apply a shaking motion to the bottom of the patient’s rib cage to aid in secretion removal. The therapist will usually ask the patient to take five to seven deep breaths and then apply the motion with their hands open and positioned on the rib cage. Similarly, with percussion, patients with any fractures at or near the rib cage or with underlying bone disease such as osteoporosis should have the force applied lowered or halted altogether.

Coughing or Huffing

Coughing-coffee

Upper Lobes

Apical Segments of Upper Lobes

Ape

Drainage of the upper lobes of the right and left lungs involves the patient laying back at a 30-degree angle normally with a pillow behind them for support. At this point, the therapist will cup their hands and utilize percussion over the top portion of the clavicle and in between the scapula to facilitate drainage.

Posterior Segment of the Upper Lobes

Post-terrier

Drainage of the posterior segments of the upper right and left lungs requires the patient to lean forward on a pillow at a 30-degree angle after which the therapist will apply percussion over the upper back to aid in secretion removal.

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Anterior Segments of the Upper Lobes

Anteater

Drainage of the anterior segment of the upper lobes requires patients to be positioned flat on their backs on a table with a pillow behind their heads and between their knees. At this point, percussion can be applied between the clavicle and the nipple area on each side of the body.

Middle Lobes

Middle Lobe of the Right Lung

Writing-right Middle-ages Man

Drainage of the middle lobe of the right lung requires positioning the patient on their back whilst having their upper body turned to the left, knees flexed, and with the foot of the table/bed raised approximately 16 inches. A pillow or wedge can then be placed under the patient extending from the right shoulder to the right hip to help maintain a chest angle tilt of 15 degrees.

Lingula of Left Lobe

Tongue of the Laughing-left Lobe

The middle lobe of the left lung, also called the lingula. In this position, the foot of the bed is at an elevation of 16 inches and the patient's upper body turns towards the right. A wedge or pillow can then be placed underneath the patient's left side to maintain the position. The patient's knees should also be placed in a flexed position whilst also making sure to keep the chest tilted at a 15-degree angle.

Lower Lobes

Anterior Basal Segments of the Lower Lobes

Anteater Bass-guitar

The anterior portion of the lower lobes of the right and left lung can be drained by placing the patient on their right side to drain the left lobe or on their left side to drain the right lobe. After this, the foot of the bed/table should be elevated to 20 degrees, the top knee should be staggered slightly ahead of the bottom (or table/bedside knee), and a pillow should be added between the legs. Once this is accomplished the therapist may begin administering percussion to the lower ribs of the patient.

Lateral Basal Segments of the Lower Lobes

Ladder Bass-guitar

Drainage of the lateral basal segments of the lower lobes begins by placing the patient on their side (left side to drain the right lobe or on the right side to drain the left lobe) and then rotating the torso 1/4th of the way upward. The upper leg should be flexed with a pillow underneath for support. Finally, the foot of the bed/table should be elevated 20 inches.

Posterior Basal Segments of the Lower Lobes

Post-terrier Bass-guitar

Drainage of the posterior basal segments of the lower lobes requires patients lay on their stomachs face down with a pillow under the hip for support and comfort. Once the foot of the bed/table is raised to 20 inches the therapist may apply percussion over the lower ribs taking care to apply the force close to, but not directly on, the spine.

Superior Segment of the Lower Lobes

Super-man

Drainage of the superior segments of the lower lobes begins by placing the patient on their stomach face down, table/bed flat, and then placing a pillow under the hips to create the ideal angle for drainage of the segments. At this point, the therapist can apply percussion over the middle of the back of the patient at the tip of each respective scapula.

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