

**Respiratory Care Services
John Dempsey Hospital
Policy and Procedure Manual**

Subject: **Chest Physical Therapy**
AARC TS: 2010 - LIMITED (2 POS) .35 HRS (21 MIN.)
2120 - COMPREHENSIVE (4 POS.) .75 HRS. (45 MIN.)

Objective: Manipulating the chest wall and utilizing gravity as a means of mobilizing secretions are ways CPT can promote bronchial hygiene. The basic techniques of CPT are postural drainage, chest percussion and vibration, and coughing. CPT techniques may be applied therapeutically or prophylactically. The goals are:

1. Prevent accumulation of bronchial secretions
2. Promote mobilization of bronchial secretions.
3. Improve efficiency of cough mechanism.
4. Improve efficiency and distribution of ventilation.

Indications:

1. Excessive accumulation of secretions, as seen in many acute or chronic pulmonary diseases.
2. Retained secretions caused by dehydration and pulmonary disease.
3. Prophylactic care of preoperative patient with history of pulmonary problems or potential postoperative pulmonary problems.

Procedure:

1. Locate the patient's chart and review it with special attention to:
 - a. the history of the patient's illness, the findings on physical examination, laboratory results, x-ray results and the patient's working diagnosis.
 - b. the doctor's orders must be read before the initial patient assessment and then each shift to see if changes have been made.
2. Explain to the patient that their doctor has ordered chest physical therapy, what the purpose of the therapy is, and what the therapy consists of.
3. Wash hands thoroughly in patient's presence.
4. Universal Precautions must be taken.
5. Provide bronchodilator therapy if indicated *prior* to (not simultaneously with) delivering chest physical therapy.

6. Patient should be positioned according to lung segments requiring CPT as per physician's orders. (Specific positions detailed in next section). The therapist makes a cup with each hand. This is done by keeping fingers together, flexing the fingers and tucking the thumb against the index finger. The therapist then rhythmically and alternately strikes the chest wall producing a loud clapping noise. This *should not* cause pain, discomfort or bruising when done correctly. Chest percussion should be continued from 2 - 5 minutes for each position ordered.

Note: *Standard positions listed or duration of treatment stated may not always be feasible due to the patient's overall medical condition. Treatment may need to be modified to suit the clinical situation. (See precautions and/or adverse reactions.) Mechanical percussion may be used with some patients.*

7. Standard postural drainage positions (see attached diagram):

- a. Apical Segments of Right Upper Lobes:
 1. Patient in semi-Fowler's position with the head of the bed raised 45 degrees.
- b. Anterior Segments of Both Upper Lobes:
 1. Patient in supine position with the bed flat.
- c. Posterior segments of the right upper lobe:
 1. Patient one quarter turn from prone position with the right side up, supported by pillows with the head of the bed flat.
- d. Apical-Posterior Segment of the Left Upper Lobe:
 1. Patient one quarter turn from prone position with the left side up, supported by pillows with the head of the bed elevated 30 degrees.
- e. Medial and Lateral Segments of the Right Middle Lobe:
 1. Patient one quarter turn from supine position with the right side up and the foot of the bed elevated 12 -14 inches.
- f. Superior and Inferior Segments of Linguals:
 1. Patient one quarter turn from supine position with left side up and the foot of the bed elevated 12 -14 inches.
- g. Segments of Both Lower Lobes:
 1. Patient prone with the head of the bed flat and a pillow under the abdominal area.
- h. Anteromedial Segment of the Left Lower Lobe and

the Anterior Segment of the Right Lower Lobe:

1. Patient supine with the foot of the bed elevated 18 - 20 inches.

i. Lateral Segment of the Right Lower Lobe:

1. Patient directly on the left side with the right side up and the foot of the bed elevated 18 - 20

j. Lateral Segment of the Left Lower Lobe

1. Patient directly on the right side with the left side up and the foot of the bed elevated 18 - 20 inches.

k. Posterior Segment of Both Lower Lobes:

1. Patient prone with the foot of the bed elevated 18 -20 inches.

8. **Vibration** - after percussion of a specific lung segment has been completed, instruct the patient to take a deep inspiration. During patient expiration the therapist places their hands on the chest wall and vibrates/shakes their arms while gently compressing the chest wall. This procedure helps to mobilize secretions toward the major airways.

9. **Coughing** - have patient take a slow deep breath through their nose. Instruct them to hold their breath for a count of three. The patient should open their mouth and cough three times as they exhale.

10. The patient should be encouraged to cough and expectorate secretions at any time during treatment, however, it is not uncommon for some patients not to have productive coughs right away. Tell the patient this and encourage him to expectorate rather than swallow secretions as this can cause nausea.

11. Wash your hands in the patient's presence after the treatment is completed.

12. Chart the treatment and your observations on the Respiratory Care Treatment Record located at the patient's bedside. Write any recommendations for changes in treatment or therapy in the Progress Notes section of the patient's chart. **Be sure to include any adverse reactions and action taken to correct the situation.**

General Precautions:

1. Emphysema
2. Pulmonary Embolus
3. Open wounds, skin grafts, burns
4. Orthopedic procedures
5. Anti-coagulant therapy
6. Pulmonary Abscess

Contraindications to Chest PT

1. Unstable cardiac or respiratory status
2. Head injuries
3. Recent thoracic surgery
4. Recent abdominal surgery
5. Recent diaphragmatic surgery
6. Recent tracheal-esophageal surgery
7. Severe Obesity
8. Recent (within one hour) meal or tube feed
9. Untreated pneumothorax
10. Flail chest
11. Frank hemoptysis
12. Acute spinal cord injuries
13. Fractured ribs
14. Chest tubes

Adverse Reactions:

Patients should be observed for increased respiratory distress evidenced by changes in vital signs or hypoxemia, and treatment slowed or discontinued if warranted. Notify the patient's nurse and document all adverse reactions in the progress notes section of the patient's chart.

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