COHESIVE HEALTHCARE MANAGEMENT & CONSULTING

MANGUM REGIONAL MEDICAL CENTER

TITLE		POLICY
Chest Physical Therapy and Postural Drainage		**RES-015**
MANUAL	EFFECTIVE DATE	REVIEW DATE
Respiratory		
DEPARTMENT	REFERENCE	
Respiratory		

SCOPE

This policy applies to all Respiratory Care Practitioners who provide Chest Physical Therapy and Postural Drainage to patients of Mangum Regional Medical Center.

POLICY

Respiratory Services shall provide postural drainage procedures as ordered by the patient's medical provider.

PURPOSE

To provide guidelines for Respiratory Care Practitioners for the patient who requires an airway clearance technique to help clear the lungs of mucus build up.

PROCEDURE

1. Verify order by checking the patient's medical record.
2. Review the patient's medical record for information relevant to respiratory therapy, such as x-ray results, blood gas values, position restrictions, etc.
3. Gather equipment and supplies:
    - Pillows;
    - Towel;
    - Tissues/Basin
    - Personal Protective Equipment, as applicable
    - Stethoscope
    - Suctioning Equipment
    - Oxygen Equipment, as needed
4. Introduce yourself to the patient.
5. Perform hand hygiene.
6. Identify the patient using two (2) patient identifiers.
7. Explain the procedure to the patient.

COMPONENTS OF POSTURAL DRAINAGE THERAPY

A. Postural Drainage:
  - Utilize gravity to aid in the removal of secretions from one or more lung segments to the central airway where the secretions can be removed by coughing or mechanical aspiration

B. Chest Percussion:
  - Clapping/cupping against the chest wall and lung to better mobilize secretions

C. Chest Vibration:
  - Vibrating the chest in an attempt to mobilize secretions

D. Turning:
  - Turning the patient promotes lung expansion and improves arterial oxygenation

CONTRAINDICATIONS:

The decision to use the postural drainage procedure requires an assessment of the potential benefits versus the potential risks to the patient. Therapy shall be provided for no longer than needed to obtain the desired therapeutic results.

A. All positions are contraindicated for the following:
  - Intracranial pressure (ICP) greater than 20 mm/Hg;
  - Head and neck injury until stabilized;
  - Active hemorrhage with hemodynamic instability;
  - Recent spinal surgery or acute spinal injury;
  - Acute spinal injury;
  - Active hemoptysis;
  - Empyema;
  - Bronchopleural fistula;
  - Pulmonary edema associated with congestive heart failure;
  - Large pleural effusions;
  - Pulmonary embolism;
  - Aged, confused or anxious patients who will not tolerate position changes;
  - Rib fracture, with or without flail chest

B. Trendelenburg position is contraindicated for the following:
  - Intracranial pressure (ICP) greater than 20 mm Hg;
  - Patients in whom increased intracranial pressure is to be avoided (i.e., neurosurgery, aneurysms, eye surgery);
  - Uncontrolled hypertension;
  - Distended abdomen;
  - Esophageal surgery;
  - Recent gross hemoptysis related to recent lung carcinoma treated surgically or with radiation therapy;
  - Uncontrolled airway at risk for aspiration (tube feeding or recent meal)

C. Reverse Trendelenburg is contraindicated in the presence of hypotension or vasoactive medication.

D. External manipulation of the thorax.

E. In addition to contraindications previously listed, the following should be considered:
   - Subcutaneous emphysema;
   - Recent epidural spinal infusion or spinal anesthesia;
   - Recent skin grafts, or flaps on the thorax;
   - Burns, open wounds and skin infections of the thorax;
   - Recently placed transvenous pacemaker or subcutaneous pacemaker (particularly if mechanical devices are to be used);
   - Suspected pulmonary tuberculosis;
   - Lung contusion;
   - Bronchospasm;
   - Osteomyelitis of the ribs;
   - Osteoporosis;
   - Coagulopathy;
   - Complaint of chest wall pain

POSTURAL DRAINAGE:

1. Have the patient sit upright (erect) to drain the apical segments of both upper lobes.
2. Have the patient sit at a 45-degree angle to drain the anterior segment of the left upper lobe.
3. Ask the patient to sit forward, leaning on a pillow at a 45-degree angle to drain the posterior segment of the left upper lobe.
4. Position the patient ¾ prone, resting on the left side to drain the posterior segment of the right upper lobe.
5. Position the patient in a 3/4 supine position with his/her head down 15 degrees. Lying on the right side will drain the left lingula, and lying on the left side will drain the right middle lobe.
6. The superior segments of both lower lobes are drained by putting the patient prone with a pillow under the abdomen to flatten his/her back.
7. The anterior segments of the lower lobes are drained by putting the patient supine with his/her head down 30 degrees and a pillow under the knees.
8. The lateral segments of each lower lobe are drained by having the patient lay on his/her side with head down 30 degrees. Lying on the right side will drain the left lobe and vice versa.
9. The medial segment of the right lower lobe is drained when the patient lies on his/her right side 3/4 supine, hips twisted back and head down 30 degrees.
10. The posterior segments of both lower lobes are drained when the patient is prone, a pillow under his/her hips and head down 30 degrees.

CHEST PERCUSSION:

1. Cup hands to trap air.
2. Move wrists, not arms.
3. Clap chest wall over draining segment.
4. Clap for one to two (1-2) minutes over each area. (Five [5] minutes over each segment for cystic fibrosis.)

CHEST VIBRATION:

1. Cover area to be vibrated with a towel.
2. Place hands on both (anterior and posterior) sides of the patient's chest.
3. Produce a rapid vibratory motion by contracting the muscles of the upper arms and shoulders.
4. While vibrating, compress the chest wall, moving hands down and away from the trachea.
5. This is done during an exhalation following a deep inspiration for three or four (3 or 4) breaths.

IMPORTANT POINTS:

1. Positions are modified to accommodate the patient's clinical conditions and tolerance.
2. This procedure should be done no sooner than two (2) hours following any meal.
3. Positions should be held for two to three (2-3) minutes for postural drainage. If chest percussion is done, hold positions for three to five (3-5) minutes.
4. With patient in each position, follow these steps:
    - Auscultate segment;
    - Percuss draining area;
    - Vibrate;
    - Have patient cough;
    - Auscultate segment

COUGH:

1. Place the patient in a semi-Fowler's position (45-degree angle) with the knees flexed.
2. Instruct the patient to slowly inhale through the nose and exhale through pursed lips several times.
3. Instruct the patient to cough twice during each exhalation.
4. Patient should be instructed **NOT TO TAKE A LARGE, DEEP BREATH PRIOR TO COUGHING**. (This type of coughing may lead to a coughing spasm and is ineffective).
5. If there is pain as a result of surgery of abdomen or a chronic lung condition, patient should be encouraged to cough using some type of support.
    - Pillows may be held over the area of pain to brace the patient while coughing.
6. If a patient is unable to cough, use suction equipment as necessary.

PATIENT MONITORING DURING POSTURAL DRAINAGE:

1. The following shall be monitored and documented in the patient's medical record before, during and after postural drainage therapy:
   - Vital signs;
   - EKG, if available;
   - Breath sounds;
   - Skin color;
   - Breathing pattern; symmetrical chest expansion; flail chest
2. Sputum production:
   - Quantity;
   - Color;
   - Consistency;
   - Odor;
   - Effectiveness of cough;
   - Patient's response to procedure

INFECTION PREVENTION AND CONTROL:

1. Perform hand hygiene before and after contact with the patient.
2. Dispose of used tissues in waste receptacle.
3. If suctioning is required, follow sterile technique.

SAFETY PRECAUTIONS:

1. Percussion is never done over bare skin, bony prominences or female breast tissue.
2. Exercise extreme caution when doing this procedure on very old or fragile patients.
3. Modify the positions as needed to accommodate the patient's clinical condition and/or tolerance.
4. Be alert for possible complications of this procedure, such as reflux of gastric juices, bruised skin, etc.
5. Only properly licensed staff are allowed to administer this procedure.

REFERENCES

Nettina, Sandra M. (2014). *Lippincott Manual of Nursing Practice, Tenth Edition*. Philadelphia, Pennsylvania: Lippincott Williams and Wilkins.

Cystic Fibrosis Foundation. (n.d.). Basics of Postural Drainage and Percussion. Retrieved from https://www.cff.org/Life-With-CF/Treatments-and-Therapies/Airway-Clearance/Basics-of-Postural-Drainage-and-Percussion/

REVISIONS/UPDATES

Date	Brief Description of Revision/Change