

Percussion Vest

Definition of Terms

Airway clearance – Movement of mucus out of the lungs by coughing or other applied techniques to reduce airway obstruction, prevent the likelihood of infection and improve lung function.

Alveoli – Tiny sac-like structures at the end of the bronchial tree that allow carbon dioxide and oxygen to move between the lungs and the bloodstream.

Bronchi – The airway branches that carry air from the trachea to the alveoli.

Chest wall oscillation – Application of an external vibration device to the chest to help clear airways of mucus.

Chronic – Persistent, long-lasting, difficult to get rid of.

Hemoptysis – Coughing up blood.

Lung airways – The passages in the lungs by which air enters and leaves. These passages consist of the trachea and bronchial tree.

Percussion vest - A device worn over the chest area designed to vibrate the chest to loosen and remove mucus from the airways.

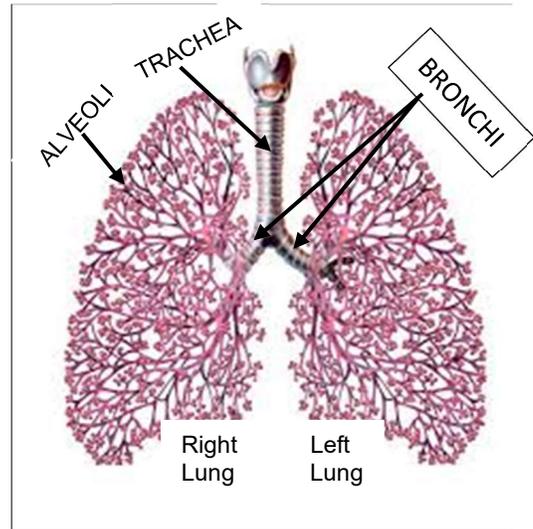
Respiratory Distress – Difficulty breathing.

Symptoms include:

- ◀ Agitation
- ◀ Increased respiration rate
- ◀ Difficult to awaken
- ◀ Increased pulse rate
- ◀ Complaint of “air hunger” or difficulty breathing
- ◀ Increased effort to breathe (gaspings)
- ◀ Changes in skin color (pale)
- ◀ Face or lips become pale, blue, or gray

Sputum – Mixture of saliva (spit) and mucus coughed up from the respiratory tract.

Trachea – Windpipe; 4-6 inch tube connecting the back of the throat to the bronchi.



Why would a person use a Percussion Vest?

There are more than 35 million persons in the United States with debilitating diseases that affect their ability to clear their airways of mucus build-up. Using a mechanized vest to vibrate the chest is a way to **loosen mucus in the airways so it can be cleared**, promoting lung expansion, improved gas exchange and oxygenation.

The percussion vest assists the movement of mucus (phlegm) from the smaller parts of the lungs to the larger airways, so the person can more effectively cough up mucus from their airways. A person who cannot cough effectively may need oral suctioning with this treatment.

Diagnoses often associated with the need for percussion vest assistance include:

- ◄ Cystic fibrosis
- ◄ Chronic Obstructive Pulmonary Disease (COPD)
- ◄ Chronic asthma
- ◄ Muscular Dystrophy (MD)
- ◄ Limited body mobility (such as paraplegia or quadriplegia)

What are some things that should be considered when using vest therapy?

- ◄ Treatments should be done as directed.
- ◄ If the vest causes itching, have the person wear thicker clothing under the vest.
- ◄ At least once a year, the vest and vest-machine must be evaluated to assure proper fit of the vest and proper functioning of the machine.
- ◄ It's best to do the treatment before eating or to wait at least one hour after eating to avoid stomach problems.
- ◄ If the person has an upset stomach, nausea or vomiting, hold the treatment and contact a licensed healthcare professional (HCP).
- ◄ Do not use the vest if a person has broken ribs, is coughing up blood, or has a head or neck injury. Contact a HCP.
- ◄ Contact a HCP if the person has fallen or been in an accident.



How to use the vest

- ◄ Be sure the vest fits correctly. It should be placed over a tee shirt or other thin layer of clothing. Be sure that the clothing is not bunched up under the vest.
- ◄ Be sure the shoulder straps (if applicable) are of proper length to allow the vest to cover the upper chest without causing pressure on the armpits due to being too short.
- ◄ The bottom of the vest should come to just above the hip bones.
- ◄ Adjust the fasteners so that when the person takes a deep breath, there is room for a hand to fit between the vest and the chest.
- ◄ Connect the tubing to the generator and the ports on the vest.
- ◄ Sit the person upright if possible, or make sure the head of the bed is elevated.



- ◄ Turn on the machine's main power switch. **DO NOT change frequency, pressure, or time settings when starting the machine. These are preset for each person.**



- ◄ As the vest inflates, firmly grasp the vest at the bottom and pull down to prevent it from riding up.
- ◄ The person's speech should be "choppy" indicating the set pressure is effective in creating airway vibration.
- ◄ **Watch the person during the treatment or stay within hearing distance and check the person at least every 5 minutes.**
- ◄ Let the machine run for as long as it is set to run. Turn off machine when it stops.
- ◄ Stop the machine if the person voices or shows signs of discomfort. Report any problems to the person's licensed healthcare professional.
- ◄ After the machine is turned off, have the person cover their mouth (assist as needed), prompt them to cough to clear airway. Follow the instructions you were given for how long the person is to cough.
- ◄ You may be instructed to perform oral suctioning instead of or in addition to having the person cough.
- ◄ After the treatment, remove hoses and vest. Clean the equipment as instructed.
- ◄ Have the person wipe their face and clean their hands after treatment. Assist as necessary.

Report to the person's licensed healthcare professional right away:

- ◄ Any increased coughing, nasal drainage or stuffiness.
- ◄ If treatment was not completed for any reason (such as illness, vomiting, diarrhea, refusal, mechanical problems).

Are there any potential adverse side effects with percussion vest therapy?

The person may experience:

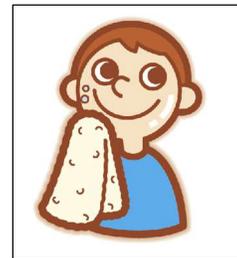
- ◀ Vomiting.
- ◀ Bronchospasms (wheezing, shortness of breath).
- ◀ Decrease in oxygenation or signs of respiratory distress that do not go away.
- ◀ Pulmonary hemorrhage (coughing up blood, shortness of breath).



If any of the above side effects are observed, stop the therapy and

- ◀ Inform a licensed healthcare professional right away.
- ◀ Document.

Infection Control



- ◀ Wash hands and put on gloves at the beginning of treatment.

- ◀ Periodically clean the vest using a disposable sanitizing wipe.

- ◀ Have the individual clean their face and hands after coughing or suctioning. Assist with these as needed.

Removing Gloves Safely



Peel one glove off from top to bottom. Hold the removed glove in your gloved hand.



Using two fingers, peel the other glove from the wrist.

- ◀ Remove soiled gloves and put them in a lined waste container.
- ◀ Wash hands.

Checklist for using a Percussion Vest

- _____ 1. You **MUST** receive training on the use of a person's percussion vest before using it with them.
- _____ 2. Wash hands and put on gloves.
- _____ 3. Prepare percussion vest equipment and suction machine if suction will be used.
- _____ 4. Instruct the person about use of the vest (body position; length of treatment).
- _____ 5. Encourage the person to relax, breathe normally and cough when they feel like it.
- _____ 6. Place the vest on the person and check the fit of vest. It should be snug, but allow a hand to be inserted between the vest and chest. The vest should not sit on or below the hip bones.
- _____ 7. Help the person into a comfortable position of their choice. Be sure their upper body is elevated.
- _____ 8. Connect the tubing to the vest and generator per instructions.
- _____ 9. Turn generator on by pressing "start." Frequency and time are pre-set – **DO NOT** adjust.
- _____ 10. As the vest inflates, firmly grasp it at the bottom and pull it down.
- _____ 11. Stay within auditory range and visually monitor the person at least every 5 minutes during the treatment time. Stop the treatment immediately if the person is upset or in pain.
- _____ 12. When the treatment is done, have the person cough or suction as instructed by the person's licensed healthcare professional.
- _____ 13. Remove gloves, wash hands.

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Trainee name: _____ Date: _____

_____ Instructor initials Instructor Name _____

Comments: