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## **Chest Physiotherapy Using the Vest**

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**Introduction** Vest therapy is indicated when external manipulation of the chest is the physician's treatment of choice for increasing the clearance of mucus in patients with pulmonary disorders. The system promotes airway clearance and improves bronchial drainage utilizing High Frequency Chest Compression.

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**Audience** Accountability/Training

The Vest therapy may be administered by a Licensed Respiratory Care Practitioner trained in the procedure(s).

Training must be equivalent to the minimal entry level in the Respiratory Care Service with the understanding of age specific requirements of the patient population treated.

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**Physician's Order** Prior to the initiation of Vest therapy the RCP will verify the following as specified in the physician's orders:

- Type of modality
  - Frequency
  - Duration
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**Indications** The following conditions are indications for Vest use:  
Documented need for airway clearance

- Evidence of difficulty with secretion clearance
- Atelectasis caused by or suspected of being caused by mucus plugging
- Diagnosis of disease such as cystic fibrosis, bronchiectasis, or cavitating lung disease
- Need for sputum sample for diagnostic evaluation

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### **Contraindications**

The vest is contraindicated if the following conditions are present:

Head and/or neck injury which has not been stabilized

- Active hemorrhage with hemodynamic instability
- Temporary pacemaker
- Acute pulmonary emboli
- Hemoptysis

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- Empyema
- Pneumothorax untreated
- Percussion over fractured ribs

**Procedure** Once an order has been obtained for vest therapy the RCP will utilize the following outline:

<b>Step</b>	<b>Action</b>
1.	Assemble the vest circuit and the correct size vest. Put the vest on. Connect vest to the PTU (Pulsating Therapy Unit)
2.	Attach the power cord from the back of the PTU into properly grounded outlet. Connect the hose to the unit. Attach the other end of the hose to the vest.
3.	<b>Quick start session</b> (10 minute session with ramping)  From the start up screen, select Quick Start. Adjust pressure by pressing either down or up. Default pressure is set at 60 %.Optimal benefit is derived at the highest pressure settings tolerated. Press pause to temporarily stop the session. When the session pauses, press RUN to resume the session or END to return to the startup screen.

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4.	<p><b>Auto Pause Session</b></p> <p>From the start up screen, press Auto Pause.</p> <p>Adjust pressure by pressing either down or up.</p> <p>Press Pause to temporarily stop the session.</p> <p>When the session pauses, press RUN to resume the session or END to return to the startup screen</p>
5.	<p><b>Multistep Session</b></p> <p>Customized therapy with multiple steps and ramping.</p> <p>Programmable up to 12 steps.</p> <p>Set at desired pressure per step and adjustable during sessions.</p>
6.	<p><b>Assessment of Outcome</b></p> <p>Sound of voluntary or reflex cough mechanic</p> <p>Increase in the patient's own ability to clear secretions</p> <p>Increased tolerance for procedure;</p> <p>Sputum amount, consistency, color and frequency</p> <p>Auscultation of chest/Improved Chest X-ray</p>
7.	<p>If bronchodilator therapy is prescribed, assemble nebulizer and other equipment needed for therapy</p>

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**Adverse  
Effects**

**Decreased Oxygenation**

- Increased ventilatory drive
- Increased Heart rate
- Desaturation

**Bronchospasm**

- Wheezing
- Short of Breath **Pulmonary Hemorrhage**
- Frank hemoptysis
- Shortness of breath

In the event the patient demonstrates signs of decreased oxygenation, pulmonary hemorrhage or bronchoconstriction, therapy will be stopped. Assess the situation and do the following:

- Inform the charge nurse
- Inform the physician
- Chart the appropriate information

Further treatments will not be given until the physician is aware of the situation and has provided appropriate orders.

**Infection  
Control**

Follow as outlined in:

Follow procedures as outlined Healthcare Epidemiology Policies and Procedures: #2.24 Respiratory Care Services.

<http://www.utmb.edu/policy/hcepidem/search/02-24.pdf>

Healthcare Epidemiology Policies and Procedures #1.5; Cleaning and Reprocessing of Patient Care Equipment and Medical Devices.

<http://www.utmb.edu/policy/hcepidem/search/01-05.pdf>

**Reference**

AARC Clinical Practice Guidelines; Respiratory Care; 1991; 36: 1414-1426  
Postural Drainage Therapy

Langenderfer B. Alternatives to percussion and postural drainage. A review of mucus clearance therapies: percussion and postural drainage, autogenic drainage, positive expiratory pressure, flutter valve, intrapulmonary percussive ventilation, and high-frequency chest compression with the ThAIRapy Vest. J Cardiopulmonary Rehabilitation. 1998; 18:283-289.

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Advanced Respiratory; The Vest Airway Clearance System Instruction Manual

inCourage Airway Clearance Instruction Therapy Manual. 2016.  
Respiratory Technology, Inc. [www.respirtech.com](http://www.respirtech.com)

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