In today's busy health care environment, finding time to administer manual chest percussion, with postural drainage, is a challenge for caregivers. Additionally, some patients may be unable to tolerate optimal positioning or chest clapping with manual therapy. Yet pulmonary complications triggered by impaired airway clearance can have serious results— inflammation, infection, lung damage, even respiratory failure.

The Vest™ system provides exceptionally consistent, easy-to-use therapy. Through high-frequency chest wall oscillation (HFCWO) technology, The Vest™ system dislodges mucus from the bronchial walls, thins and mobilizes secretions, and mobilizes mucus from the smaller to larger airways, where it can be cleared by coughing or suctioning.
**Mechanism of action**

The Vest™ system consists of an inflatable vest connected by tubes to an air-pulse generator. The generator rapidly inflates and deflates the vest, compressing and releasing the chest wall up to 25 times per second. This technology is called high-frequency chest wall oscillation (HFCWO).

The rapid chest movement mimics “mini-coughs” that dislodge and thin the mucus, moving it along to the central airways. The Vest therapy treats all lobes of the lungs simultaneously and is technique-independent. It can be beneficial to patients across the continuum of care, including acute and post-acute facilities, as well as in the home.

**Research demonstrates safety and efficacy**

The Vest™ system has been in use since 1988. More than 80 clinical trials demonstrate the effectiveness of HFCWO therapy for patients with a variety of conditions. In addition, over a dozen peer-reviewed studies demonstrate that The Vest™ system clears mucus more effectively and helps maintain or improve pulmonary function better than conventional chest physiotherapy.

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**Tolerance rating of vest therapy**

- Patient tolerance assessed daily by respiratory therapist during therapy.
- No significant adverse events were reported.
- Only 12 (16.4%) patients were discontinued, citing inability to tolerate.
- Subjective tolerance ratings among continuing users for all therapy days were: Mean + CD = 4.3 + .94; Median=5.0.

Source: Brierly S, Adams C, Suelter J, Grooch T, Becker B, Safety and tolerance of high-frequency chest wall oscillation (HFCWO) in hospitalized critical care patients. Arizona Heart Hospital, Phoenix, AZ; Salina Regional Health Center, Salina KS, Advanced Respiratory, St Paul, MN.

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**Ventilator weaning**

In a study comparing the safety and efficacy of The Vest™ system and CPT on 54 long-term ventilator-dependent patients with airway clearance problems, The Vest™ system patients were weaned from ventilator use at more than twice the rate of CPT patients.

Source: Ndukwu IM, Shapiro S, Nam AJ, Schumm PL. Comparison of high-frequency chest wall oscillation (HFCWO) and manual chest therapy (MCPT) in long-term acute care hospital (LTAC) ventilator-dependent patients. Chest 1999;116(4 suppl 2):311S
Saves time and effort

Manual chest percussion therapy is time-consuming, with a complete session typically taking up to 45 minutes. A session with The Vest system takes less than half the time (typically 15-20 minutes).

The patient does not have to be repositioned during therapy—safer for the caregiver and more comfortable for the patient. In fact, the therapy can be administered to a patient in any position, even while sitting in a bedside chair. Disposable, single-patient-use vests provide superior infection control.

Effective for secretion clearance dysfunction arising from a variety of conditions

The Vest has been prescribed for secretion clearance dysfunction associated with a variety of diseases and conditions, including cystic fibrosis, muscular dystrophy, chronic obstructive pulmonary disease, and cerebral palsy. It has been successfully used to maintain healthy lung function in post-operative, ICU, and post lung transplant patients.

In clinical outcomes studies, The Vest system is associated with:

- Improved secretion clearance;
- Stabilized or improved pulmonary functions;
- Improved exercise tolerance;
- Reduced incidence of pneumonia and related hospitalizations;
- Higher patient satisfaction and therapy adherence; and
- Reduced healthcare costs.

Airway Clearance Therapy Indications*

- Production of excess or abnormal airway secretions
- Atelectasis, mucous plugging or pulmonary infiltrate demonstrable on chest x-ray
- Ineffective or impaired cough
- Hypoventilation/hypoxemia
- Diagnosis of pneumonia
- Artificial airway
- Mechanical ventilation
- Aspiration
- Immobility
- Post thoracic or abdominal surgery
- Pre-peri-post thoracic organ transplantation
- Post trauma with risk for pneumonia
- Prolonged anesthesia
- Frequent need for therapeutic bronchoscopy/lavage
- Need for diagnostic sputum induction

Absolute Contraindications

- Head and neck injury until stabilization
- Active hemorrhage with hemodynamic instability

* The APTA, American Physical Therapy Association, list of indications for airway clearance therapy.

Reduced incidence of pneumonia and related hospitalizations

In a 12-month retrospective, 12-month prospective assessment of The Vest™ system, eleven individuals with quadriplegic cerebral palsy experienced statistically and clinically significant reductions in total pneumonias and pneumonia-related hospitalizations.

<table>
<thead>
<tr>
<th>Pneumonias</th>
<th>Hosp. for pneumonia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before tx</td>
<td>After tx</td>
</tr>
<tr>
<td>52</td>
<td>3*</td>
</tr>
<tr>
<td>0.012</td>
<td>0.031</td>
</tr>
</tbody>
</table>

* p<0.05


Reduced healthcare costs

After one year of HFCWO therapy, BlueCross BlueShield members with CF demonstrated a 49% reduction in total healthcare costs.

<table>
<thead>
<tr>
<th>Healthcare costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>pre-Vest</td>
</tr>
<tr>
<td>$400,000</td>
</tr>
<tr>
<td>$300,000</td>
</tr>
<tr>
<td>$200,000</td>
</tr>
<tr>
<td>$100,000</td>
</tr>
</tbody>
</table>

The Vest™, So everyone can breathe a little easier®, and Hill-Rom are trademarks or registered trademarks of Hill-Rom Services, Inc.

Hill-Rom reserves the right to make changes without notice in design, specifications and models. The only warranty Hill-Rom makes is the express written warranty extended on the sale or rental of its products.

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135172 10/05/04

To learn more

Call your Hill-Rom representative today to learn more about The Vest system or to request a demonstration. Visit our web site at www.thevest.com for detailed information.

Product Specifications

<table>
<thead>
<tr>
<th><strong>Model Number</strong></th>
<th>103</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generator</strong></td>
<td>35 lbs. (22&quot; H x 14.5&quot; W x 10.25&quot; D)</td>
</tr>
<tr>
<td><strong>Stand</strong></td>
<td>8 lbs. (17&quot; H x 25&quot; Diameter base) 5 legs with 2 locking casters and 3 non-locking caster</td>
</tr>
<tr>
<td><strong>Electrical</strong></td>
<td>120V AC, 5 Amp, 60 Hz Underwriters laboratories (UL) Listed for U.S. and Canada</td>
</tr>
<tr>
<td><strong>Decibels</strong></td>
<td>58 dB</td>
</tr>
</tbody>
</table>

Part Numbers

| **Air-pulse generator (#103)** | 300413 |
| **Tubes** | 200426 |
| **Remote control** | 200328 |
| **Contour foam** | 300177 |
| **Instruction Manual** | 500115 |

Wrap Vest Sizing Chart

<table>
<thead>
<tr>
<th><strong>Size</strong></th>
<th><strong>Chest Circumference</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>23-33 inches</td>
</tr>
<tr>
<td>Medium</td>
<td>&gt;33-43 inches</td>
</tr>
<tr>
<td>Large</td>
<td>&gt;43-53 inches</td>
</tr>
<tr>
<td>X-Large</td>
<td>&gt;53-67 inches</td>
</tr>
</tbody>
</table>

A. Hill-Rom warrants The Vest™ Airway Clearance System Model 103 generators and accessories to be free from defects in materials and workmanship for a period of one year. This warranty period commences on the date of shipment from the manufacturing facility. This warranty is made to the original purchaser only. Purchasers are limited to licensed healthcare entities. Home and residential customers are not eligible.

B. Hill-Rom will repair or replace, at its discretion, at its facility, any accessory and/or part(s) of the generator which it finds have become defective during normal use or, at the discretion of Hill-Rom, it may elect to supply a replacement generator and/or accessories to Purchaser. For repair or replacement as set forth in Section A above, call the Hill-Rom Technical Services Department at 800-445-3730 to arrange for the return of the defective generator or accessory.

C. This Limited Warranty is extended only to Purchasers within the United States. See annotated bibliography at www.thevest.com for comprehensive research citations.