

High Frequency Chest Wall Oscillation (HFCWO) Therapy and the SmartVest[®] Airway Clearance System

How Does HFCWO via the SmartVest[®] Airway Clearance System Work?

The SmartVest[®] Airway Clearance System consists of the patented SmartVest[®] or SmartVest Wrap[®], worn over the torso, and an air pulse generator that supplies air pulses to the garment. These air pulses produce High Frequency Chest Wall Oscillation (HFCWO), creating air flows throughout the lungs. The rapid and repetitive air flows act like a cough to shear secretions from the airway wall, thin secretion viscosity, and move the secretions upward where they can be expelled by coughing or suctioning.

Today, High Frequency Chest Wall Oscillation (HFCWO) is commonly prescribed and widely practiced for patients of all ages who are battling the consequences of retained pulmonary secretions. This method is technique-independent, better-tolerated than Chest Physiotherapy (CPT), and can be administered by either the patient or caregiver.

Indications for Use

Electromed, Inc. has received clearance to market from the FDA for the following indications: The Electromed, Inc. SmartVest[®] Airway Clearance System is designed to deliver High Frequency Chest Wall Oscillation (HFCWO) to promote airway clearance and improve bronchial drainage. The SmartVest[®] is indicated when external chest manipulation is the physician's treatment of choice to enhance mucus transport.

Indications for use of the SmartVest[®] Airway Clearance System follow the published American Association for Respiratory Care (AARC) Clinical Practice Guidelines. Absolute contraindications identified by the AARC include (1) head and neck injury, and (2) active hemorrhage with hemodynamic instability. For further information regarding indications, contraindications, etc., refer to AARC Clinical Practice Guideline: Postural Drainage Therapy. These guidelines can be found at <http://www.rcjournal.com/cpgs/pdtcpg.html>.

SmartVest[®] Features and Benefits

The SmartVest[®] Airway Clearance System was developed to enhance patient comfort, improve ease of use, increase portability, and reduce the cost of High Frequency Chest Wall Oscillation.

Features

- Soft Start[®] technology delivers HFCWO with a calmer, gentler, more relaxed treatment experience
- Full coverage pulsation of the front, back, and sides of the torso simultaneously
- Single-hose design and reversibility of the SmartVest Wrap[®] allows patients greater flexibility
- Soft, breathable fabric reduces perspiration and itching
- SmartVest[®] and SmartVest Wrap[®] sizes fit small children to large adults
- Machine-washable fabric simplifies cleaning (SmartVest Wrap[®] must be spot cleaned)
- Wheeled SmartVest[®] Carrier travels easily – fits as airplane carry-on
- Dual position controls adjust to operate generator upright or horizontally

Additional benefits include

- Patient comfort and compliance – when patients are able to tolerate HFCWO therapy more comfortably, they are more likely to comply and benefit consistently
- Reduction in lung infections, such as pneumonia^{1,2,3}
- Reduction in hospital stays^{1,2,3}
- Reduction in expensive medications^{1,2,3}
- Cost-effectiveness by reducing the secondary complications associated with impaired mucus transport^{1,2,3}

¹ Chahal K, Austin G, Chakravorty I. High Frequency Chest Wall Oscillation (HFCWO) in patients with Chronic Obstructive Pulmonary Disease (COPD) and Mucus Hypersecretion. Proceedings of the American Thoracic Society May 2008.

² Ohnsorg F. A Cost Analysis of High Frequency Chest Wall Oscillation in Cystic Fibrosis. AM J Respir and Crit Care Med 1994; 149(4): A669.

³ Pliophlys AV, Lewis S, Kasnicke I. Pulmonary vest therapy in pediatric long-term care. Journal of the American Medical Director's Associations 2002 Sep-Oct; 3 (5): 318-321.