

A NEW STANDARD IN AIRWAY CLEARANCE SYSTEMS

PNEUVEST SERIES

CLINICALLY PROVEN TO
OPTIMISE RESOURCES





CONTENTS

PATIENT BENEFITS OF PNEUVEST	3
HOW DOES IT WORK?	4
WHY HFCWO IS PREFERRED FOR MUCUS REMOVAL	5
HOW HFCWO COMPARES	6
SIZING CHART	7
PNEUVEST PV-100 FEATURES	8
TECHNICAL SPECIFICATIONS	10
PRODUCT COMPARISON	11

PATIENT BENEFITS OF PNEUVEST

The PneuVest airway clearance system has been proven to benefit patients in the removal of mucus which has been retained due to acute and chronic respiratory conditions. It is safer and more effective than traditional techniques such as chest physical therapy (CPT), hand percussion, etc. and more effective than conventional vibrating mucus removal devices.

INDICATIONS

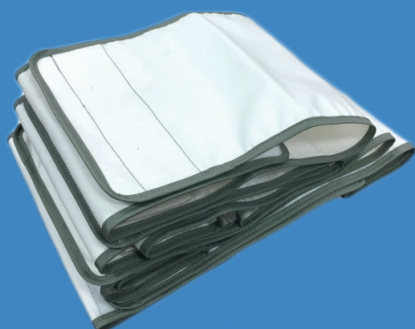
Patients with:

- asthma, bronchiectasis
- pulmonary infection
- chronic obstructive pulmonary disease
- atypical pneumonia
- myasthenia gravis
- chronic bronchitis
- occupational lung disease
- impaired muco ciliary clearance
- pulmonary lesions cystic fiber
- AIDS merged CARINI's cystic,
- coma
- respiratory failure
- diaphragm impairment
- pneumonia atelectasis
- senile pneumonia

- muscular dystrophy
- decreased muscle function
- decreased ventilation lung volumes
- impaired gas exchange
- alveolar impairment
- sedation
- neuro injury
- spinal muscular atrophy, etc.

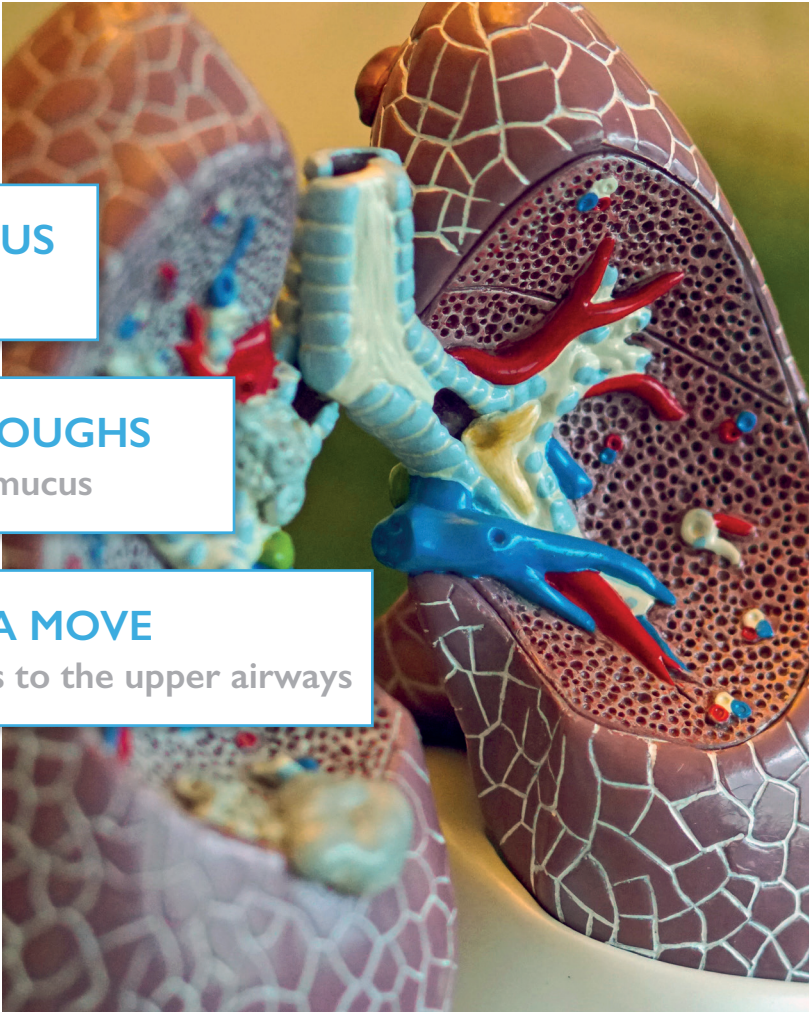
Patients after:

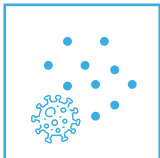
- surgery, tracheotomy, preoperative airway cleaning, coma, spinal cord injury, ventilator dependence, etc.





HOW DOES IT WORK?

High Frequency Chest Wall Oscillation (HFCWO) is a technology that dislodges mucus from the bronchial walls and mobilises secretions and mucus from the smaller to larger airways where it can be cleared by coughing or suction. It generates high frequency air pulses and delivers them to the chest wall via a vest.



 **BREAKS UP MUCUS**
making it thinner

 **CREATES MINI-COUGHES**
in lungs to push out mucus

 **MAKES THE CILIA MOVE**
faster to carry mucus to the upper airways

ACCELERATED AIRFLOW

HFCWO creates shear forces on the intima of the trachea wall, resulting in a significant increase in the airflow velocity inside the airways, which helps mobilise the secretions and move them to the upper airways.

SAFE, EFFECTIVE, EFFICIENT

WHY HFCWO IS PREFERRED FOR MUCUS REMOVAL

Safe: Compared with such traditional techniques as chest physical therapy (CPT), hand percussion, etc., HFCWO is much safer as it uses gentle air pulse compression and does not cause physical injuries to ribs and muscles.

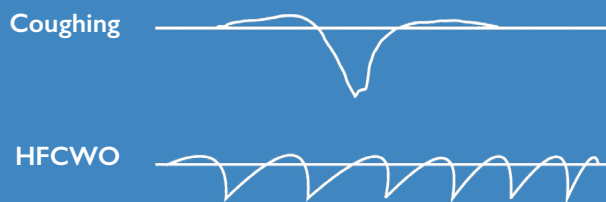
Effective: HFCWO can mobilise mucus deeply seated in the lower airways. Clinical evidence has shown that HFCWO is:

- more effective than conventional vibrating mucus removal devices
- three times more effective than CPT.

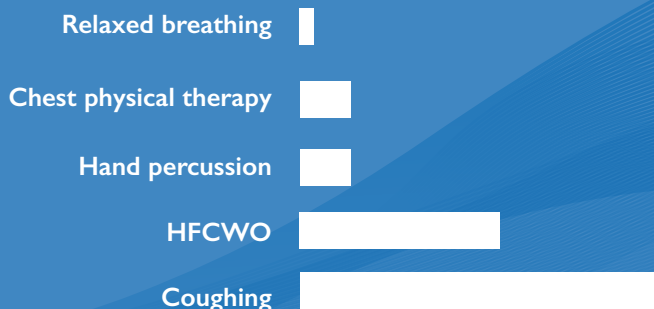
Efficient: Unlike other techniques which are performed manually by a nurse or a physiotherapist, HFCWO is a highly automated system, requiring minimal medical staff presence. HFCWO has been proven to optimise human resources.



SHEAR FORCE



AIRFLOW VELOCITY



HOW HFCWO COMPARES

HFCWO could provide a safer, more effective, efficient and comfortable treatment for patients and medical staff alike. Here, we will compare the patient and staff experiences of HFCWO with Hand Percussion and Chest Physical Therapy (CPT), as well as the effectiveness of the options.

PATIENT EXPERIENCE

Hand Percussion and CPT require patients to be in a prone, lateral or seated position, while HFCWO can be performed on patients in any position they are comfortable, as well as those sedated or in a coma.

While the other techniques may not be suited to a number of patients, HFCWO is well tolerated in adults with acute asthma or chronic obstructive pulmonary disease (COPD).*

All techniques are considered generally safe for use, however HFCWO integrates Soft Mechanism Force to reduce the chances of physical discomfort or injury. It has been found to be safe for use on frail patients, children and trauma patients with lung and chest wall injuries.†

STAFF EXPERIENCE

Both CPT and Hand Percussion must be performed by a professionally trained physiotherapist, and can be physically demanding and fatiguing. As HFCWO is mostly automatic, it could be operated without any special training, is mostly automatic and has previously been used by family members outside of hospital settings for non-COVID patients.

With Hand Percussion and CPT, each physiotherapist must work solely with one patient at a time. However, with HFCWO, one trained member of staff, who does not need to be a physiotherapist, could easily oversee the automated treatment of up to five patients. The plug-and-play design also includes an intuitive interface on a large touch screen, which makes it easy to operate from first use.

EFFECTIVENESS

While Hand Percussion and CPT offer partial chest wall oscillation, HFCWO oscillates the entire chest wall. It is one of the most effective solutions for mucus removal in the example of COVID-19 and its common co-diagnoses.

The accelerated airflow creates shear force on the intima of the trachea wall, resulting in a significant increase in the airflow velocity inside the airways – over three times more so than Hand Percussion or CPT. The air velocity is less than that of a single cough, but patients are able to tolerate the shear force of HFCWO with regular frequency, without the physical demands felt from a coughing fit.

This helps mobilise mucus, assisting in moving it to the upper airways where it is more easily cleared by coughing or suctioning. In a clinical study, significantly more sputum was expectorated during HFCWO than the other methods.‡



References:

* "High frequency chest wall oscillation for asthma and chronic obstructive pulmonary disease exacerbations: a randomized sham-controlled clinical trial" Mahajan et al., Respiratory Research (2011) available at <https://respiratory-research.biomedcentral.com/articles/10.1186/1465-9921-12-120>

† "Evaluation of the safety of high-frequency chest wall oscillation (HFCWO) therapy in blunt thoracic trauma patients", Casandra A Anderson, Journal of Trauma Management & Outcomes (2008), available at <https://pubmed.ncbi.nlm.nih.gov/18837992>

‡ "A Comparison of Bronchial Drainage Treatments in Cystic Fibrosis", Janet Kluff, Pediatric Pulmonology (1996), available at <https://pubmed.ncbi.nlm.nih.gov/8905888>

SIZING CHART

Compare below the sizes of the vests Clarity Medtech stock:

SIZE	REUSABLE VEST	DISPOSABLE VEST	REUSABLE STRAP	DISPOSABLE STRAP
XXS	-	-	480mm x 180mm	-
XS	790mm x 374mm	-	625mm x 180mm	-
S	890mm x 392mm	890mm x 392mm	780mm x 180mm	780mm x 180mm
M	1100mm x 483mm	1100mm x 483mm	950mm x 200mm	950mm x 200mm
L	1300mm x 557mm	1300mm x 557mm	1100mm x 200mm	1100mm x 200mm
XL	1500mm x 643mm	1500mm x 643mm	1300mm x 250mm	1300mm x 250mm



NON-DISPOSABLE
VEST



CHEST
STRAP



DISPOSABLE VEST



**EASY
EFFECTIVE
EFFICIENCY**

Nebulization

PNEUVEST PV-100 FEATURES

AUTOMATIC OPERATION

Save human resources and reduce the work load.

8-INCH HD TOUCH SCREEN


Performance and parameters can be adjusted at any time to give clear treatment information.

INFORMATION STORAGE

Patients' historical treatment information can be stored for future analysis.

FOUR TREATMENT MODES

For different treatment groups, meeting various departmental needs.



PNEUVEST CLINICAL BENEFITS

Safe in ICU / post-cardiac surgery

Increases sputum mobilisation

Improves pulmonary function

Cost effective

Decreases hospitalisations / ICU days

Decreases antibiotic / oxygen needs

Effective in a wide range of respiratory diseases

TECHNICAL SPECIFICATIONS

TREATMENT MODES	Three modes: regular/gradient/loop
PRESSURE	1-10 gears
FREQUENCY	5-20Hz
SESSION TIME	1-99 minutes
INTERFACE	8-inch colour LCD touch screen
AUTOMATIC COUGH PAUSE	Yes
REMOTE ONE-BUTTON STOP FUNCTION	Yes
TYPE OF VEST/CHEST BAND	Reusable or single-patient use, optional
SINGLE-USE VEST MATERIAL	PVC, non-woven fabric
DATA SAVING	Available
POWER CORD	Hospital-grade plug
MAIN UNIT DIMENSIONS	Height: 27.0cm, Width: 35.5cm, Depth: 35.5cm
MAIN UNIT WEIGHT	14.5kg
POWER SUPPLY	100-240V, AC, 400VA, 50 Hz
SHIPPING CASE DIMENSIONS	Height: 48.0cm, Width: 47.5cm, Depth: 46.5cm
SHIPPING CASE WEIGHT	18kg
FUSE REQUIREMENT	2 each, F3.5AL250V ϕ 5X20
OPERATING CONDITIONS	Temperature: 5°C to 40°C Relative humidity: 80% maximum, non-condensing Atmospheric pressure: 700 mbar to 1060 mbar
TRANSPORT AND STORAGE CONDITIONS	-20°C (-4°F) to 55° C (131°F) If the user suspects that the environment conditions for transport and storage have been exceeded, return the unit for service.

The above specifications are subject to change without notice.



NON-DISPOSABLE VEST



DISPOSABLE VEST



CHEST STRAP

PRODUCT COMPARISON

	PNEUVEST PV-100	HILL-ROM VEST 205
FUNCTION	Sputum excretion module	Sputum excretion module
OPERATION	True colour liquid touch screen + knob navigation	Knob navigation
SAFETY	One button pause function + pressure and frequency automatic adjustment function	Without one button pause function
PRESSURE GRADE	3-30 MMHG	1-10 MMHG
OSCILLATION FREQUENCY	1-20Hz	5-20Hz
WORKING MODES	Common, Cycle, Gradient, Intelligent customisation	Common, Cycle, Gradient, Intelligent customisation
SCREEN	8-inch high-definition touch screen	LED
CHEST 'V' AIRBAG DESIGN	Yes	No
BACK AIRBAG CENTRE ISOLATED DESIGN	Yes	No
DEVICE COST	Competitive	Expensive
PNEUVEST PV-100 ADVANTAGE SUMMARY	<ol style="list-style-type: none"> 1. 8-inch high-definition touch screen convenient for medical staff to use and has the function of treatment information storage. 2. Automatic cough pause function – ensures the safety of patients during treatment. 3. Wider frequency range of 1-20Hz to improve patient tolerance and improve efficacy. 4. Ergonomic airbag vest with safety design to enhance comfort and sputum excretion. 	



PV-100
HFCWO


Trolley is not included in a standard package of PV-100



EDWARD SEVIOUR MANAGING DIRECTOR

E ED.SEVIOUR@CLARITY-PHARMA.COM

☎ +44 (0)333 241 3520

 Unit 3, Mead Way, Great Hallingbury
Bishop's Stortford CM22 7FD, United Kingdom

