

smiths medical
portex®

acapella® vibratory PEP Therapy System

Maximizing Therapy Effectiveness, Empowering Patient Compliance



Investigating Questions

Each acapella® vibratory PEP therapy system uniquely provides PEP therapy by producing airflow vibrations that can be delivered in any position to effectively mobilize secretions, open airways and optimize medication delivery.



POSITIVE EXPIRATORY PRESSURE (PEP) THERAPY TO IMPROVE OUTCOMES FOR CHRONIC RESPIRATORY DISEASE?

- What types of patients are prescribed Chest Physiotherapy (CPT) or secretion clearance therapies?
- What outcomes are desired with the current therapies being offered?
- How would you, your staff and your patients benefit if your patients were more compliant?
- What are your thoughts on adding PEP therapy to make CPT more effective or replace it all together?

DID YOU KNOW

ACAPELLA® VIBRATORY PEP SYSTEMS MAY BE BENEFICIAL IN TREATING PATIENTS WITH THESE CONDITIONS?

- COPD (Chronic Bronchitis / Emphysema)
- Cystic Fibrosis
- Bronchiectasis
- Atelectasis
- Abdominal / Thoracic Post Operative Atelectasis and Secretion Retention
- Asthma (with Secretion Retention)
- CNS / Neuromuscular Disease
- Mucociliary Clearance Disorders

Positive Expiratory Pressure

THERAPEUTIC GOAL OF PEP

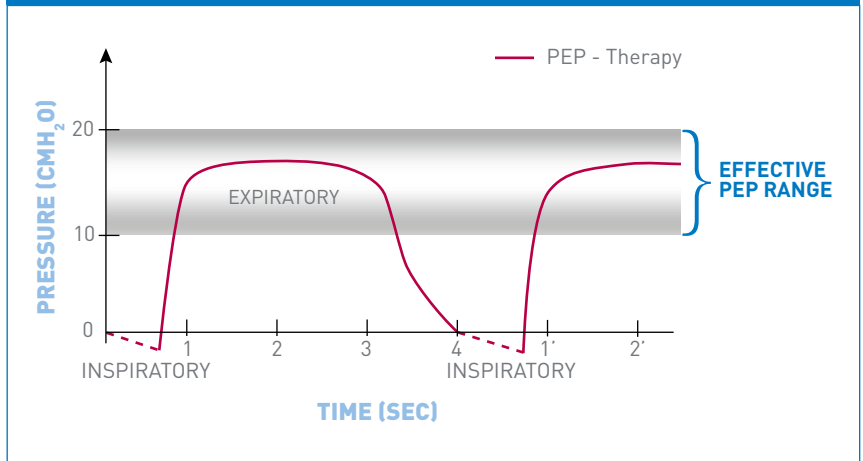
- Achieve Positive **Expiratory** Pressure in the range of 10 - 20 cmH₂O
- Maintain an inspiratory/expiratory ratio of 1:3 to 4^{1,2}

Expiratory time should be 4 times longer than inspiratory

RECOMMENDED TECHNIQUE

- Inhale slowly and deeply followed by an active but not forced exhalation to Functional Residual Capacity (FRC)
- 10 consecutive breaths with no air leaks between patient and acapella® system. Use nose clips or mask if necessary
- 3 huff cough maneuvers to raise secretions
- 3, 10-breath repetitions, or as prescribed
- 1-4 sessions per day, or as prescribed
- Increase frequency of therapy as opposed to duration of therapy in response to severity of illness

Pressure Therapy Curve



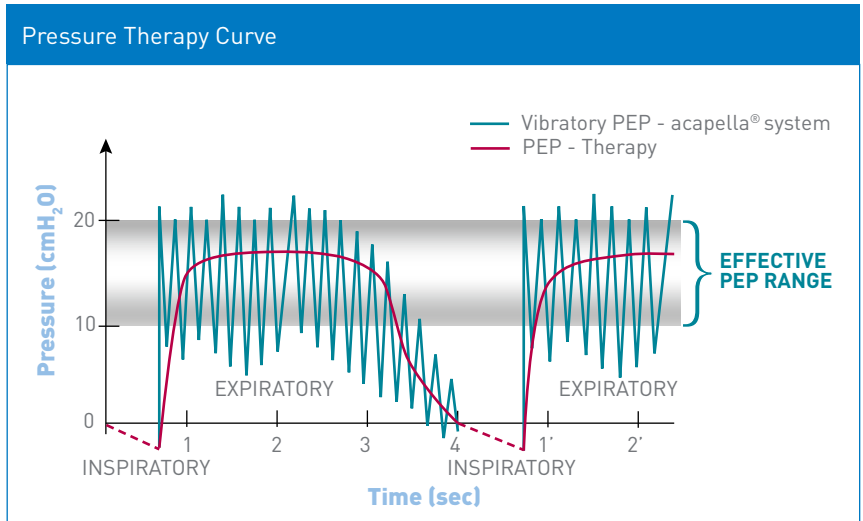
Positive Expiratory Pressure Theory – Vibratory PEP

BENEFITS OF AIRWAY PRESSURE THERAPY³

- Reduces air trapping
- Prevents or reverses atelectasis
- Optimizes delivery of bronchodilators

AND WITH VIBRATIONS ADDED⁴

- Reduces mucus viscoelasticity
- Loosens, shears & disengages secretions from airways
- Mobilizes secretions from distal to central airways
- Aids in mobilization of retained secretions³



Intended as a representation, not drawn to scale

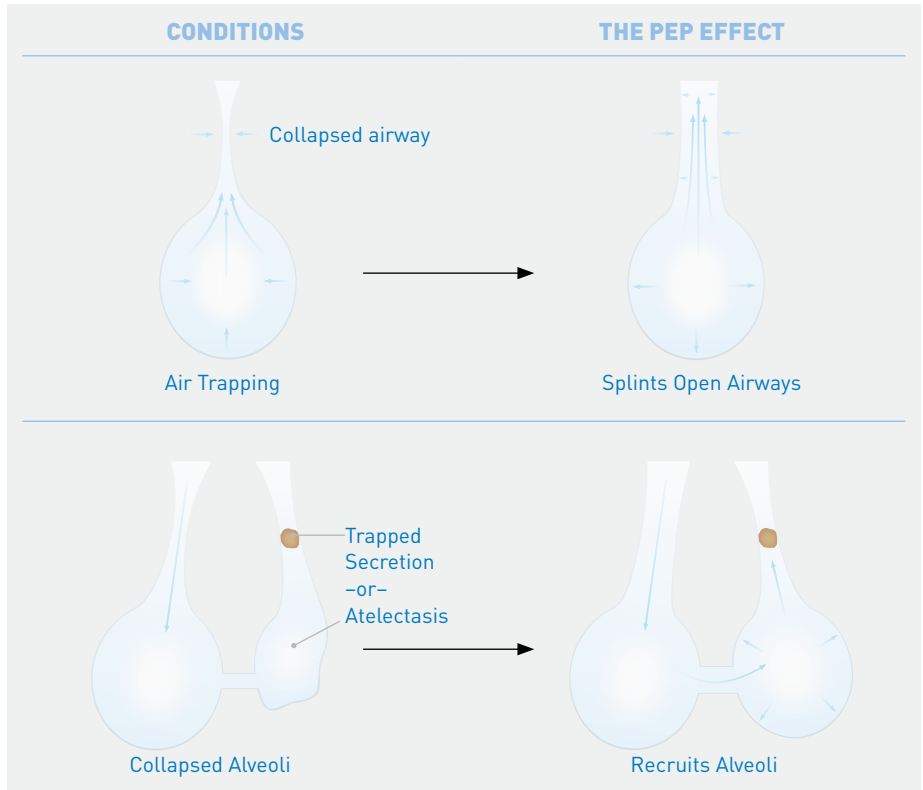
Positive Expiratory Pressure Theory

Positive Expiratory Pressure throughout exhalation equalizes bronchiole & alveolar pressure to prevent airway collapse and keep airways open⁵

Positive Expiratory Pressure recruits alveoli through collateral ventilation – moving air behind trapped secretions, improving gas exchange and reversing atelectasis^{6,7}

BENEFITS OF AIRWAY PRESSURE THERAPY

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- Aids in mobilization of retained secretions
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acapella® Vibratory PEP Therapy Systems – Empowering Patient Compliance

EASY TO SUSTAIN EFFECTIVE LENGTH OF PEP THERAPY

One-way inspiratory valve makes it easy to control breathing patterns and perform multiple repetitions without removing it from your mouth

EASY TO ACHIEVE PEP IN ANY POSITION

Magnetic rocking resistor allows therapeutic pressure range to be achieved when held in any position while sitting, standing, lying down, reclining... even Trendelenburg

EASY TO CLEAN

Choice and duet designed to disassemble to clean for improved hygiene and extended working life – can be washed on top rack of dishwasher, boiled or autoclaved

EASY TO MINIMIZE THERAPY TIME⁸

15-20 minutes therapy time versus 30-60 minutes for traditional chest physiotherapy, and it's easy to combine two therapies into one by connecting a SVN, cutting therapy time in half and improving compliance

EXPERIENCE THE SIMPLICITY*



acapella® choice vibratory PEP therapy system

*For Licensed Prescribers and Respiratory Therapists

acapella® Vibratory PEP Therapy Systems – Maximizing Therapy Effectiveness

SUSTAINS EFFECTIVE LENGTH OF PEP THERAPY

Utilizing a patented magnetic rocking resistor, it's easy to adjust resistance to achieve therapeutic PEP pressures and required expiratory time. Using the adjustable dial, adjust the proximity of the magnet to modify the resistance required to oppose the patients expiratory flow rate during active exhalation

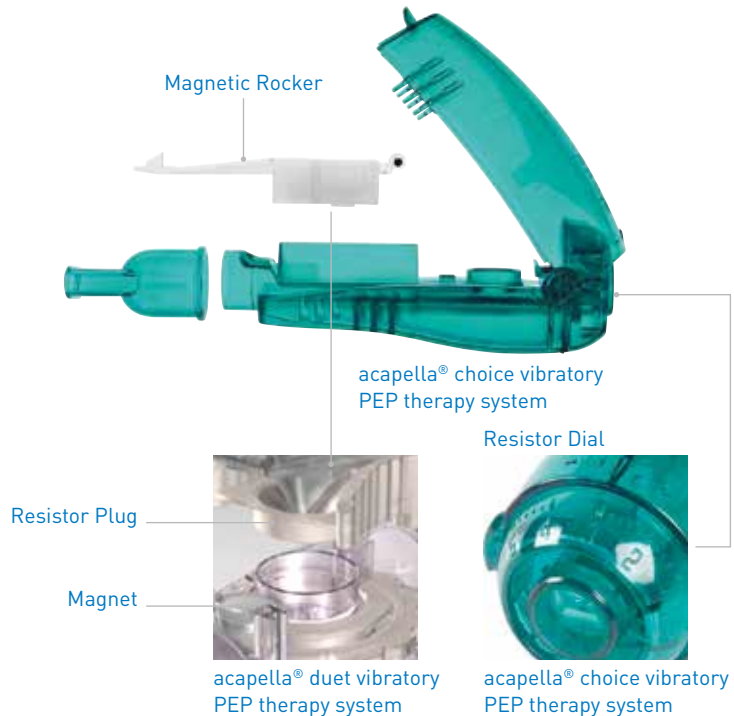
VIBRATIONS INCREASE SHEAR FORCE TO BETTER REMOVE AND MOBILIZE SECRETIONS

Airway is intermittently occluded by the magnetic resistor plug during exhalation to produce positive expiratory pressure and airflow vibrations from 5-30 Hz

OPTIMIZES AEROSOLIZED MEDICATION DELIVERY*

Controlled respiratory rate and opening airways with PEP allows better particle deposition and distribution further into peripheral airways

FEEL THE EFFECT**



**For Licensed Prescribers and Respiratory Therapists

acapella® Vibratory PEP Therapy Systems – Review of Benefits

MAXIMIZING THERAPY EFFECTIVENESS

OPTIMIZING PEP THERAPY

Delivers an effective PEP range of 10-20 cmH₂O to effectively open airways, recruit alveoli and get air behind blocked passage ways

OPTIMIZING SECRETION CLEARANCE

5-30 Hz vibrations thins, shears and disengages mucus from tissue walls to better mobilize and expel secretions

OPTIMIZING DELIVERY OF BRONCHODILATOR THERAPY

Controlled respiratory rate, airway splinting and alveolar recruitment optimizes delivery of bronchodilator therapy

EMPOWERING PATIENT COMPLIANCE⁴

EASY TO PERFORM

Patients can perform independently – works in any position, can be used anywhere

EASY TO TEACH AND LEARN

Techniques are intuitive, do not depend on others and are time-efficient

ADAPTABLE

Devices can accommodate changes in severity of illness, optional SVN use combines two therapies into one

COST-EFFECTIVE

Reusable over active lifespan – options to disassemble for cleaning and disinfecting. Less costly equipment required

acapella® Systems – The Vibratory Quartet for a Variety of PEP Needs



acapella® DH System

- ≥ 15 L/min expiratory flow
- Ideal for most patients
- Can tee-in a small volume nebulizer
- Easy to clean, rinse & flush with warm soapy water
- Best for short-term, hospital use



acapella® DM System

- < 15 L/min expiratory flow
- Geriatric and pediatric patients
- Can tee-in a small volume nebulizer
- Easy to clean, rinse & flush with warm soapy water
- Best for short-term, hospital use



acapella® choice System

- ≥ 10 L/min expiratory flow
- Ideal for most chronic patients
- Can tee-in a small volume nebulizer
- Easy to clean – disassembles to clean and disinfect, extending active working life
- Best for long-term, hospital & home use



acapella® duet System

- ≥ 10 L/min expiratory flow
- Ideal for most chronic patients
- Accommodates standard small volume nebulizers through connection part
- Easy to clean – disassembles to clean and disinfect, extending active working life
- Best for long-term, hospital & home use

acapella® Vibratory PEP Therapy Systems – Ordering

Product Code	Description	Units
21-1530	acapella® DH System with mouthpiece	10
21-1531	acapella® DH System with mouthpiece - individually boxed devices	10
21-1015	acapella® DM System with mouthpiece	10
21-1016	acapella® DM System with mouthpiece - individually boxed devices	10
27-7000	acapella® choice vibratory PEP therapy system	10
27-7001	acapella® choice vibratory PEP therapy system - individually boxed devices	10
27-9000	acapella® duet kit: includes acapella® duet, mouthpiece, Portex® SVN, oxygen tubing, collapsible flex tubing	10
27-9001	acapella® duet System and mouthpiece	10
27-9002	acapella® duet System and mouthpiece - individually boxed devices	10

References

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5. Oberwaldner, et al Forced expirations against a variable resistance: a new chest physiotherapy method in cystic fibrosis. *Pediatr. Pulmonol.* 1986; 2(6): 358-367
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9. Mesquita et al. Scintigraphic assessment of radio-aerosol pulmonary deposition with Acapella positive expiratory pressure device and various nebulizer configurations. *Respir Care* 2014; 59(3): 328-333

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