



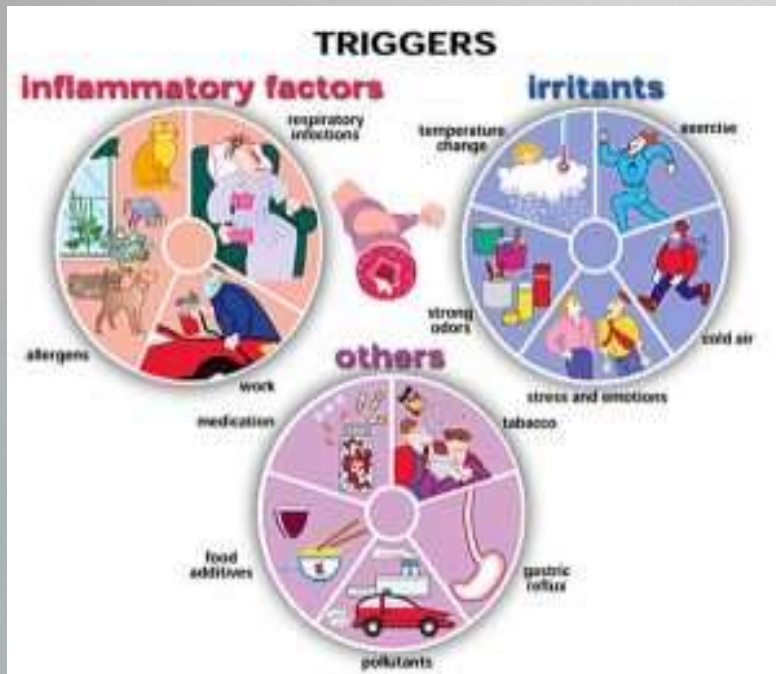
**National Jewish
Health®**

*Airway Clearance:
Improving Quality of Life*

CHERYL TORRES RRT

Inflammation and Phlegm





- Respiratory infection
- Cigarettes smoke
- Allergens
- Emotional stress
-
- Odors/perfumes/aerosols
- Pet dander
- Exercise
- Cold air
- Air pollution

Pulmonary Hygiene

Foundation for therapy:

- Non-tuberculous Mycobacteria (NTM)
Bronchiectasis
- Cystic Fibrosis
- Asthma

Most commonly asked questions

1. Which device is available for the patient
2. Where do I start
3. Is their insurance going to cover the device
4. What can we do to help expedite insurance coverage
5. Which company do we fax Rx too
6. Is this a DME product

What Is Airway Clearance?

Non-invasive forms of therapy to help mobilize and clear mucus from the airways

Methods used:

- Positive Expiratory Pressure (PEP)
- Oscillating Positive Expiratory Pressure (OPEP)
- High Frequency Chest Wall Oscillation (HFCWO)
- Volara – Oscillation, Lung Expansion Therapy with Nebulizer
- Chest Physical Therapy (CPT)

Why We Need Airway Clearance

Normal function of the airways

- helps with movement and removal of secretions from the lungs. Cilia move back and forth mobilizing mucus to the larger, central airways where it can be expectorated easier

Compromised function of the airways can result from

- Impaired or ineffective function of the cilia
- Chronic Respiratory Infections
- Overproduction of thick, sticky mucus
- Ineffective cough

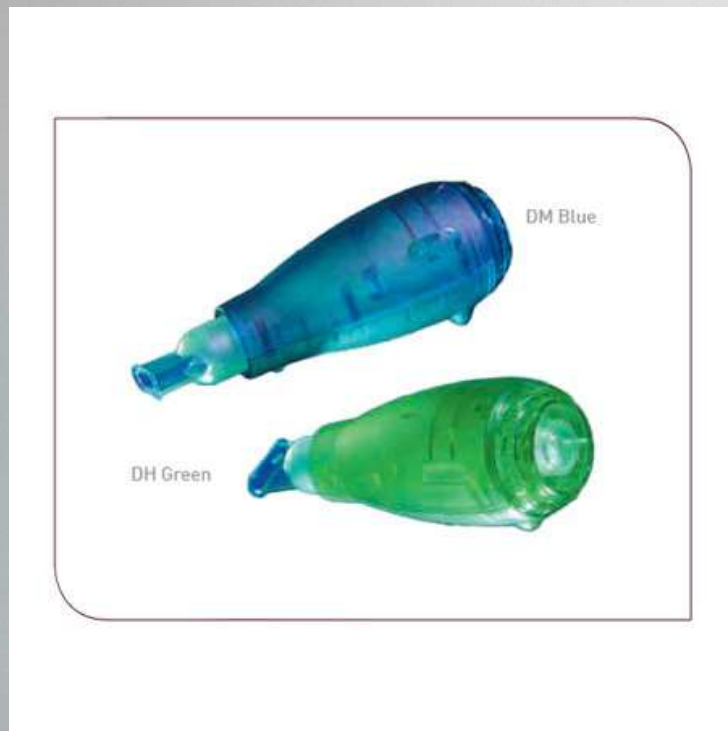
Aerobika with Manometer

Oscillating Positive Expiratory Pressure



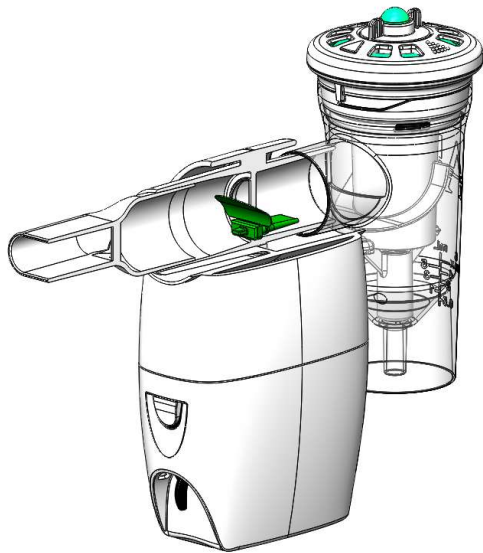
- Powered by the patients exhaled breath
- Adjustable resistance for different medical diagnoses
- Can be used in line with a nebulizer

Acapella DH, DM Valve



- Powered by patients exhaled breath
- Green Acapella used for most adult patients
- Blue Acapella used for pediatric or low lung volumes
- Not designed to be used with in line nebulizer

Secretion Management Inhaled Saline Nebes



- Hypertonic Saline
(3%, 7%, 10%)
- Normal Saline
(0.9%)
- Bronchodilators

Nebulizer can be used in
line with AerobiKA

OPEP Airway Clearance Device

Aerobika – Cleaning and Sterilization

Single patient use

- Designed for daily clean in warm soapy water
- Dishwasher safe, top shelf dishwasher
- High disinfection: boiling, microwave steam bag, 70% Alcohol, 3% Hydrogen Peroxide

Acapella – Cleaning and Sterilization

Single patient use

- Designed for daily clean in warm soapy water
- 70% Alcohol, 3% Hydrogen Peroxide

Reusable Breath Actuated Nebulizer (R BAN)

Single Patient Use

Breath actuated technology nebulizer

- Aerosolized medication is only delivered when patient inhales through the device)
- Breath actuation and Continuous mode options
- Minimal aerosol dispersed into environment
- Average treatment time is 10 - 15 minutes
- 6-month reusable nebulizer. Single patient use

Cleaning:

- Daily: Warm, soapy water after each use
- Weekly Sterilization: Boiling 5 – 10 minutes



OMBRA COMPRESSOR



- ▶ Table Top Compressor
- ▶ Compressor PSI : 42
- ▶ Operating Pressure : 19.5

- ▶ Standard compressor can be used if using Saline or Bronchodilator only
- ▶ Stronger PSI recommended for Inhaled Antibiotics
(OMBRA)



Vest Therapy (HFCWO)

High Frequency Chest Wall Oscillation

There are 2 types of High Frequency Units

▶ **Machine Powered:**

- Hill Rom - The Vest
- Respirtech - InCourage
- Electromed - Smart Vest

Battery Powered:

- Hill Rom - Monarch
- BioPhysics - AFFLO

Who supplies the equipment ?

The Vest -

set up in patient home

Hill Rom

InCourage -

set up in patient home

Respirtech

Smart Vest -

set up in patient home

ElectroMed

Monarch -

set up in patient home

Hill Rom

AFFLO -

Measured by DME, Delivered, and Schedule for
Demonstration

DME

The vest



- Machine powered
- Dual Hose
- Buckle closure
- Comes in full vest, chest vest and wrap

InCourage



- Machine powered
- Dual Hose
- Buckle closure
- Full vest and wrap

Smart vest



- ▶ Machine powered
- ▶ Single Hose
- ▶ Velcro closure
- ▶ Full vest and wrap



Portable

Vest Units

Monarch
Portable vest



AFFLO Portable vest



Battery Pack allows for **freedom of movement during treatments**



Average weight is 8 lbs



3 treatment settings
x 3 intensity levels
9 setting variations



Quiet during operation



7 sizes available

Volara

- ▶ **Three therapies in one unit**
- ▶ **CPEP** –
▶ Continuous Positive Expiratory Pressure
- ▶ **CHFO** –
▶ Continuous High Flow Oscillation
- ▶ **NEBULIZER** –
▶ Can be used with Bronchodilator and Hypertonic Saline



Benefits of Proper Pulmonary Hygiene

- ▶ Enhances mucus mobilization and removal
- ▶ Decrease recurrent lung infections
- ▶ Decrease Antibiotic use
- ▶ Decrease Hospitalization
- ▶ Noticeable decrease in cough
- ▶ Improve gas exchange
- ▶ **Improves Quality of Life**

Disclaimer

- Currently employed by National Jewish Health
 - *Electromed Inc and Respirtech Inc to provide setup and instruct patients on their new airway clearance device.*
 - *Hill Rom*
 - *Respirtech*

Provide setup and instruct patients on their new airway clearance device.

References

- ▶ Braverman, JM. Airway clearance indications: an overview. *Advanced Respiratory* (1998-2001) 800-426-4224
- ▶ Irwin RS, Boulet LP, Cloutier MM, Gold PM, Ing AJ, O'Byrne P, Prakash UBS, Pratter MR, Rubin BK, Managing Cough as a Defense Mechanism and as a Symptom: A Consensus Panel Report of the American College of Chest Physicians. *Chest* 1998;114(2):133S-181S