Optimizing Outcomes with Standardized Tracheostomy and Laryngectomy HME Use

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Why Pulmonary Health Matters

Breathing through a tracheostomy or laryngectomy results in inhaled air that is:

- Dry
- Cold
- Unfiltered

Consequences may include:

- Thickened secretions
- Increased coughing
- Airway inflammation and narrowing
- Reduced ventilation and pulmonary health

Artificial Humidification Options

Active External Humidification (delivered via tubing and a tracheostomy mask)

Disadvantages include:

- Increased noise and sleep disruption
- Reduced mobility
- Requires electricity and ongoing maintenance
- Higher cost and training burden
- Lower patient satisfaction and adherence

Passive Humidification: heat and moisture exchangers (HMEs)

- Capture heat and moisture from exhaled air
- Release warmth and humidity during inhalation
- Provide a barrier to gross airborne particles

Evidence Supporting HME Use: Laryngectomy

Level 1 evidence supports HMEs over external humidification post-laryngectomy
Consistent HME use (24/7):

- Reduces coughing and forced expectoration
- Improves secretion management
- Decreases mucus plugging and in-hospital complications

RCTs and cohort studies demonstrate:

- Fewer pulmonary symptoms
- Reduced suctioning needs
- Improved comfort and mobility
- Strong nurse and patient preference

Provox Life HMEs:

- Further reduce pulmonary symptom burden
- Improve quality-of-life measures (CASA-Q)
- Optimize performance in everyday environments

Evidence Supporting HME Use: Tracheostomy

HMEs are effective and well tolerated in spontaneously breathing patients

Hygroscopic foam HMEs (e.g., calcium chloride–treated):

- Provide superior moisture retention
- Improve secretion consistency

TrachPhone HME outcomes:

- 97% immediate post-operative tolerance
- Improved communication
- Reduced noise, suctioning, and training needs
- Cost savings and improved workflow efficiency

Driving Practice Change

Evidence supports standardizing HME use across care settings
Successful implementation includes:

- Interdisciplinary engagement
- Education and workflow alignment
- Barrier identification and removal
- Ongoing reinforcement and sustainability planning

Implementation Support

Laryngectomy Pulmonary Kits & Care Pathways

- Promote consistent, long-term HME adherence
- Reinforce best practices across settings

TrachPhone Implementation Program

- Guided transition from external humidification to heat and moisture exchangers (HMEs)
- Reduces practice variability
- Simplifies education for staff, patients, and caregivers
- Integrates evidence into daily clinical workflows

Key Takeaways

- Surgical airways significantly impair natural humidification and filtration
- HMEs are an evidence-based standard of care for pulmonary health
- Consistent HME use improves symptoms, reduces complications, and enhances quality of life
- Standardization supports better outcomes and more efficient care delivery

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