

TRACHEOSTOMY - USE OF HEAT MOISTURE EXCHANGERS (HME'S)

Staff this document applies to:

- Nurses, Medical Staff, Speech Pathologists, Physiotherapists on all campuses including ICU and outpatients.

State any related Austin Health policies, procedures or guidelines:

- [Humidification of inspired gases in patients with a tracheostomy](#)
- [Suctioning via the Tracheostomy Tube](#)
- [Recognising & Clearing a Blocked Tracheostomy Tube](#)
- [Tracheostomy Learning Package – Humidification](#)

Who is authorised to perform this procedure?:

- The decision to progress from a heated water humidifier to a heat moisture exchanger (HME) needs to be made by a Senior Physiotherapist, Clinical Nurse Consultant or member of Medical Staff.
- All members of nursing, medical, physiotherapy and speech pathology staff can place an HME on the patient's tracheostomy tube.

Definition:

- HME's can be placed directly onto the hub of a tracheostomy tube. The HME traps the moisture and heat from exhaled gas allowing it to be recycled on inspiration.
- The most commonly used type of HME at Austin Health is a "Thermovent T". There are other forms of HME available.

Clinical Alert:

- **HME's do not provide the same level of humidification as heated water humidifiers. If the patient is inadequately humidified, they are at risk of tracheostomy occlusion and/or sputum retention.**
- **Patients with large amounts of secretions are not suitable for HME use as they can block the tracheostomy with secretions when the HME is in place.**
- **HME's may not be tolerated by some patients as they marginally increase work of breathing. Patients should be monitored for dyspnoea, fatigue and O₂ desaturation.**

Rationale:

- To provide a convenient and portable form of humidification to patients who have a tracheostomy.
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Expected Outcome:

The patient's airway will be adequately humidified during the period that the HME is in use.

Procedure:

- Suction the patient if necessary to ensure a clear airway prior to placing the HME.
- Place the HME on the hub of the patient's tracheostomy tube.
- A "Thermovent T™" oxygen connector can be clipped on to the HME to provide low flow oxygen if required. Some other forms of HME's allow oxygen to be connected directly to the device via a side port



- The device shown on the left is a Thermovent T™, which requires a specific green oxygen connector to be clipped over the top to deliver supplemental oxygen. The device on the right has a foam filter and can have oxygen connected directly to the side port.
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Post Procedure:

- Ensure the patient is adequately humidified whilst the HME is in use.
 - Signs that the patient is inadequately humidified include:
 - Thick or tenacious sputum.
 - An irritable cough.
 - Difficulty coughing up or suctioning secretions.
 - Secretions are collecting and drying within the tracheostomy tube.
 - Secretions are very slow to move up the catheter during suctioning.
 - Secretions are collecting on the outside of the catheter during suctioning.
 - The HME should be discarded when visibly soiled with secretions or every 24 hrs.
 - Humidification may be augmented by the use of regular saline nebulisers. The HME should be removed whilst nebuliser is being delivered.
 - Document in the patient's history.
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Legislation/References/Supporting Documents:

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Authorised/Endorsed by:

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Tracheostomy Review and Management Service (TRAMS)
