

SUCTIONING VIA THE TRACHEOSTOMY

Staff this document applies to:

- Medical staff, Nurses, Physiotherapists and Physiotherapy Assistants on all campuses including ICU

Who is authorised to perform this procedure?

- Only those individuals who have received training in suctioning should perform this procedure.

Related policies, procedures or guidelines

- [Recognising & Clearing a Blocked Tracheostomy Tube](#)
- [Emergency management poster](#)
- [Use of the Suctionaid Tracheostomy Tube](#)
- [Tracheostomy Cuff Management](#)
- [Tracheostomy Learning Package – Suctioning](#)
- [Aseptic Technique](#)

Definition:

- Removal of secretions from the trachea and tracheostomy tube using a suction catheter connected to a suction source.
- Suctioning is used when patients are unable to clear their secretions independently by coughing or huffing
- Open suction technique is used in most areas of Austin Health. Closed suction technique is used predominantly in ICU

Clinical Alert:

- Passing a catheter through the tracheostomy can be used to assess tube patency. If resistance is encountered when passing the suction catheter or if the inner surface of the tracheostomy is roughened due to collection of dried secretions, the tube MUST be cleared as a matter of urgency.
- Hypoxia and arrhythmias are a potential complication of tracheal suctioning. Tetraplegic patients may suffer bradycardia due to vagal stimulation.
- Excessive suctioning can cause trauma to the trachea
- Fenestrated tubes: When suctioning a fenestrated tube, ensure non-fenestrated inner cannula is in situ

Rationale:

- Suctioning is performed to remove secretions from the airways in order to maintain adequate ventilation for gas exchange and ensure tube patency

Expected Outcome:

- The patient will have a patent airway and clearance of pulmonary secretions. The nurse caring for the patient will assess the patency of the tracheostomy at commencement of each shift and throughout the shift.

Equipment:

- **Open technique:** Suction catheters, standard size 12fg. If a mini-tracheostomy tube is in situ, only size 8fg or 10fg catheters can be used. A
- **Closed technique:** Purpose made device allowing repeated suction with one single catheter enclosed in a plastic sheath. e.g. Smiths Medical Portex SuctionPro72. This is a 12 Fr. 4.0 mm OD catheter enclosed in an outer sheath.
- Clean gloves
- Safety shield, goggles or glasses
- Tap water for rinsing suction tubing only. Suction catheters should NOT be rinsed.
- 10ml syringe
- Yankuer sucker
- Waste disposal bag
- Suction source with adequate/operational suction

Procedure:

Open suctioning technique: (see also [e-learning package](#) for video demonstration)

- Explain procedure, consider privacy and inform patient when you are about to begin suctioning
- Ensure suction unit is turned on and at an appropriate pressure level
- Ensure patient is well oxygenated, preoxygenate if necessary
- Decontaminate and don gloves
- Open suction catheter packet to expose adaptor only. Attach to suction tubing
- Put additional clean glove on dominant hand
- Remove catheter from packaging. Note: there are various techniques for maintaining a **clean technique** with suction. The important principle is that the glove which touches the sterile catheter **MUST NOT** be contaminated by contact with any other surface.
- Introduce catheter into tracheostomy tube using dominant hand without applying suction. If the patient is ventilated, let the ventilator deliver a breath prior to introducing suction catheter. Gently insert catheter until cough reflex is stimulated and/or gentle resistance is felt.
- Withdraw catheter slightly and apply suction by placing the thumb over the suction port. Continue to withdraw catheter with suction applied
- The procedure should not take longer than 10 seconds
- The same suction catheter may be inserted a second time when there are copious secretions, provided that it has not come into contact with exterior contaminants e.g. skin or bedclothes, and is not coated with or blocked by sputum. The catheter must **NOT** be rinsed between suction passes.

- When the patient's airway is clear of secretions, disconnect the suction catheter and discard suction catheter and gloves into the waste bag.
- Ensure the oxygen and humidification source is positioned adequately over the tracheostomy once you have finished suctioning the patient.
- Rinse the suction tubing with water

Closed suctioning technique:

- This technique is performed with a purpose made device allowing repeated suction with one single catheter enclosed in a plastic sheath. e.g. Smiths Medical Portex SuctionPro72. This is a 12 Fr. 4.0 mm OD catheter enclosed in an outer sheath for insertion and withdrawal many times over a limited no. of days (e.g. 3 days) before the device is changed to minimise colonisation of bacteria. The connection to the tracheostomy is via a standard connection with an inner lumen to allow swivel action (the device can rotate around the connection point). High pressure suction is used, and the device also includes the ability to lavage the airway (during suction technique) or suction solution through the catheter (after suction), cleaning sections out of the catheter.
- High pressure suction can remain connected to the device for immediate use as a ON – OFF valve is operated to initiate suction. This valve can be locked OFF for safety in this situation.
- The suction catheter is marked to prevent withdrawing the catheter outside the swivel connector, as this would cause a loss of a sealed airway during positive pressure ventilation.

Usual hand hygiene is performed prior to this procedure but gloves are not required;

Post Procedure:

- Wash hands or use Debrin.
- Reassure patient, assess oxygenation and breathing. Evaluate nature and volume of secretions.
- Document nature and amount of secretions and any adverse effects

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References:

Agency for Clinical Innovation (2013), Care of Adult Patients in Acute Care Facilities with a Tracheostomy: Clinical Practice Guideline

https://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0005/181454/ACI_Tracheostomy_CPG.pdf

McGrath, B. (Ed.). (2014). Comprehensive tracheostomy care: the national tracheostomy safety project manual. John Wiley & Sons.

Caruso, P., Denari, S., Ruiz, S. A., Demarzo, S. E., & Deheinzelin, D. (2009). Saline instillation before tracheal suctioning decreases the incidence of ventilator-associated pneumonia. *Critical care medicine*, 37(1), 32-38.

Choi, J. S. P., & Jones, A. Y. M. (2005). Effects of manual hyperinflation and suctioning on respiratory mechanics in mechanically ventilated patients with ventilator-associated pneumonia. *Australian Journal of Physiotherapy*, 51(1), 25-30.

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Chulay M. Suctioning: endotracheal or tracheostomy tube. In: Wiegand DJ, Carlson KK, eds. AACN Procedure Manual for Critical Care. 6th ed. Philadelphia, PA: Elsevier Saunders; 2010:62-70.

Intensive Care Society Standards. Standards for the care of adult patients with a temporary tracheostomy (2014)

[http://www.ics.ac.uk/AsiCommon/Controls/BSA/Downloader.aspx?iDocumentStorageKey=5b70a7af-c79c-4e49-bca1-648b98c06598&iFileTypeCode=PDF&iFileName=ICS%20Tracheostomy%20Standards%20\(2014\)](http://www.ics.ac.uk/AsiCommon/Controls/BSA/Downloader.aspx?iDocumentStorageKey=5b70a7af-c79c-4e49-bca1-648b98c06598&iFileTypeCode=PDF&iFileName=ICS%20Tracheostomy%20Standards%20(2014))

Morris, L., & Afifi, M. S. (2010). Tracheostomies: the complete guide. Springer Publishing Company.

Nance-Floyd, B. (2011). Tracheostomy care: an evidence-based guide to suctioning and dressing changes. Am Nurs Today, 6(7), 14-16.

Paul, F. (2010). Tracheostomy care and management in general wards and community settings: literature review. Nursing in critical care, 15(2), 76-85.

Pedersen, C. M., Rosendahl-Nielsen, M., Hjermind, J., & Egerod, I. (2009). Endotracheal suctioning of the adult intubated patient - what is the evidence? Intensive and Critical Care Nursing, 25(1), 21-30.

Russell, C., & Matta, B. (2004). Tracheostomy: A Multi-professional handbook. Cambridge University Press.

Vanner, R., & Bick, E. (2008). Tracheal pressures during open suctioning. Anaesthesia, 63(3), 313-315.

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