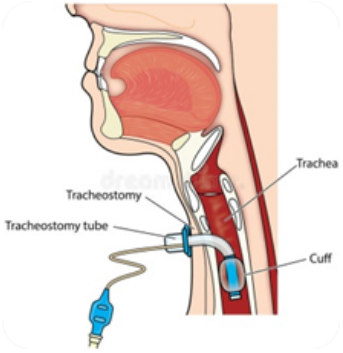
Tracheostomy



AKA – “trache”, “trachy”

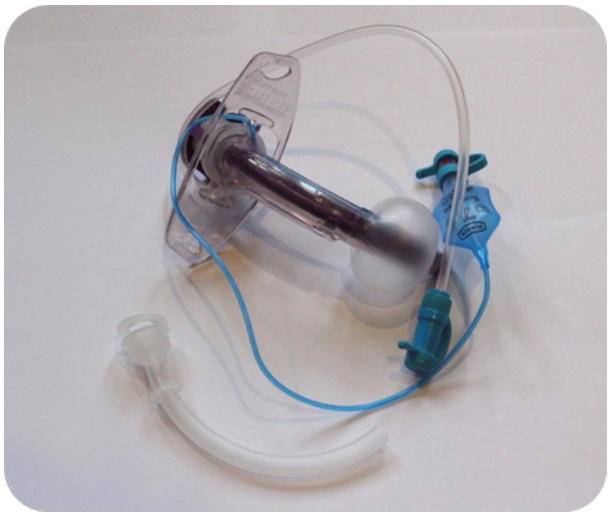
What is it?

An artificial airway inserted into the front of the neck. There are 2 main types of procedure; percutaneous (most common in Critical care) and surgical. The tubes themselves can have many different features, but can be categorised into cuffed/uncuffed and fenestrated/non-fenestrated.

How does it work?

Allows for direct access to the trachea via the front of the neck.Can be inserted for multiple reasons, but predominantly used in critical care following failed extubation of patients who are mechanically ventilated. It allows patients to fully come off sedation but still receive full mechanical ventilation (if necessary).

What does it look like?

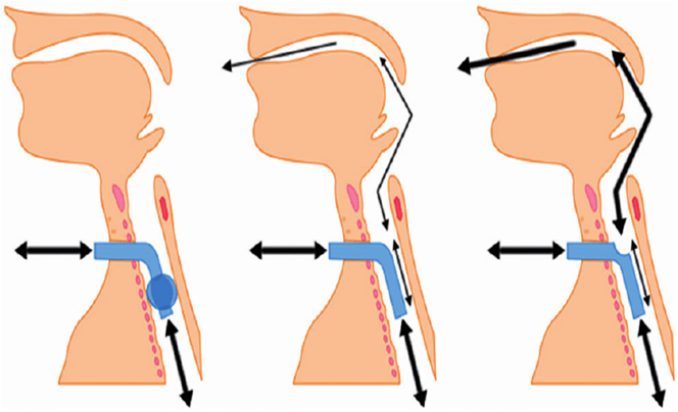


What does it do?

The function and uses of a tracheostomy are very similar to orally inserted endotracheal tubes (bronchoscopy/suction/ventilation etc.). One of the main ways that tracheostomy tubes differ from ET tubes is in their variation (cuffed/uncuffed and fenestrated/non-fenestrated). The majority of tracheostomy tubes in critical care are cuffed, non-fenestrated. This allows for complete seal of the airway and no air can pass from the lungs past the tube and up through the cords. As patients become more able to breath for themselves and wean from the ventilator,

they may start to have periods when the cuff is down. This allows patients to breathe both through the tube, but also through their own upper airway.

Fenestrated tubes are relatively uncommon in critical care, and are not advised when patients are receiving positive pressure ventilation. They are more common in patients with more long term tracheostomies, but can be used in weaning from mechanical ventilation.



What can go wrong?

As withorally inserted ET tubes, tracheostomy tubes are often vital to a patient's airway, so if there are issues with this then you should have a low threshold to get senior help. See the **emergency tracheostomy management algorithm** by the National Tracheostomy Safety Project (link below).

- Speaking valve/cap + cuff up
    - When the tracheostomy tube is capped or has a speaking valve in place, the only way these patients can breathe is through their upper airway. If the tracheostomy cuff is inflated, the patient will suffocate.
    - → If you suspect this is the case, immediately remove the speaking valve/cap.
    - → In this Trust, you are not allowed to place a cap/speaking valve on to a cuffed tube, even if the cuff is deflated.
- Blocked tube
    - Most commonly occurs due to thick secretions. When the cuff is inflated, this results in complete occlusion of the airway and is an emergency.
    - → Remove the inner tube of the tracheostomy.
    - → If this does not work then pass a suction catheter to try to suction out the obstruction.
- Displaced tube
    - This is an airway emergency, particularly with ‘new’ tracheostomies as these are more likely to ‘close’ once the tube is removed.
    - → Call for senior help and unless the patient has a laryngectomy, ventilate/oxygenate them as required via their nose & mouth.

Additional Equipment

- Swedish nose
    - Officially named ‘Humidity and Moisture Exchange’. It’s main purpose is to humidify air that enters through the tracheostomy, so called as they act like a nose, and invented in Sweden.

- Tracheostomy mask
    - These are masks with a strap that are shaped to deliver supplemental oxygen over a tracheostomy. They can be used in nearly exactly the same way as a facemask on other patients.

- Speaking valve
    - This is a one-way valve that is placed on the tracheostomy tube. This forces exhaled air up through the cords and into the upper airway allowing patients to speak.

Key safety point

Not all neck breathers are the same! Laryngectomy patients are less common, but not unheard of in ITU, and there are some key differences that occur when looking after them. Laryngectomy patients have no communication between the upper airway and lower airway. This means that they cannot be orally/nasally intubated (often used as a last resort in emergencies for tracheostomy patients), and also there is no benefit to oxygenating the mouth or nose.

Further reading

- Emergency Tracheostomy Troubleshooting - Emergency tracheostomy management
- National Tracheostomy Safety Project youtube - NTSP