

Bite-sized training from the GTC

Section 2.9 Decannulation



This is one of a series of bite-sized chunks of educational material developed by the Global Tracheostomy Collaborative. The GTC has developed up-to-date resources from international experts for the safe management of patients with tracheostomies. Within these sections are links to established resources, institutions and relevant websites, as well as some of our own educational videos, links, images and animations.

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Decannulation

The removal of a tracheostomy should occur as soon as there is no further need for it to remain in-situ. The process of removing a tracheostomy tube is referred to as decannulation. It should be considered only when a patient has successfully progressed through a structured tracheostomy weaning programme. The use of standardised multidisciplinary processes will reduce the risk of complications following the removal of the tube. Prior to the removal of a tracheostomy tube, there must be multidisciplinary agreement. Occasionally a tube must be removed in an emergency (partially displaced tube in the image). There is more detail in the emergency management section, but remember to deflate the cuff and remove any sutures prior to attempted decannulation.



The tracheostomy MDT will regularly include:

- Ward Nurse
- Physiotherapist
- Speech and language therapist
- Specialist Nurse (Tracheostomy, ENT or Outreach)
- Anaesthetist or Intensivist
- Respiratory physician
- Head and neck surgeon

The timing of the decannulation procedure needs consideration, to minimise the risks to the patient. The clinical environment should have sufficient competent staff and equipment available. YouTube videos demonstrating safe [decannulation are available here](#), with Captivate narrated presentations available here: [Videos of decannulation](#).

The position of the patient within their clinical setting should allow staff to visualise the patient easily and the patient should have constant access to an appropriate call system. It may be necessary to transfer the patient undergoing decannulation to an area where 1:1 nursing care can be offered and ready access to specialist staff who could appropriately deal with a failed decannulation or other complications. Decannulation should not occur late in the working day or at weekends unless adequate staff and resources are constantly available to provide advice, assessment and perform advanced airway and tracheostomy management should the procedure not be successful.

Prior to Decannulation the Tracheostomy MDT will confirm:

- The patient can maintain and protect their airway spontaneously
- They are free from ventilatory support with adequate respiratory function
- They are haemodynamically stable
- They are absent of fever or active infection
- The patient is consistently alert
- They have a strong consistent cough (able to cough into mouth)
- They have control of saliva + / - a competent swallow
- They are not planned for procedures requiring anaesthesia within next 7-10 days
- They are considered clinically stable

Extra caution is essential if the patient is known to have a complex airway (e.g. requiring an adjustable flange tracheostomy) or has a previously documented difficult intubation.

Equipment

For all decannulation procedures, standard bedside equipment and:

- Oxygen available
- Continuous oxygen saturation monitoring
- Microbiological swab for stoma
- New tracheostomy tubes (for possible re-insertion)
- Sterile dressing pack
- 0.9% Saline
- Semi-permeable occlusive dressing
- Suction equipment
- Relevant MDT documentation
- Resuscitation equipment must be locally available
- Access to advanced airway expert, with appropriate equipment

Additional equipment may include:

- Stitch cutter
- 10ml syringe
- Gum elastic bougie
- Bag valve mask circuit
- Rebreather circuit
- Facial nebuliser circuit / adrenaline available for nebulisation



Procedure

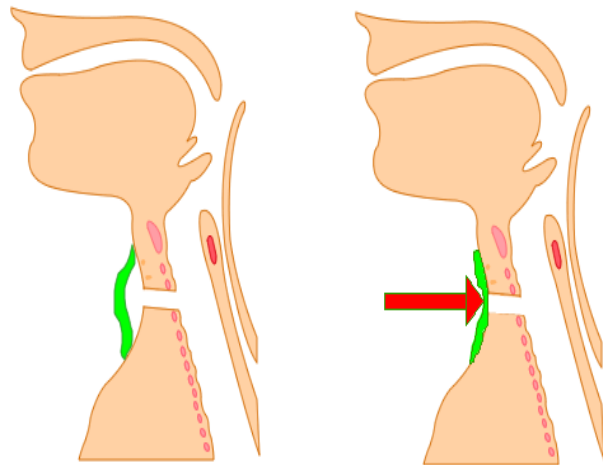
Decannulation is a 2-person procedure. After checking all relevant equipment, the patient is placed in a comfortable position with access to the neck. A full explanation is required as this is often a time of great anxiety for the patient.



Any tapes, ties or sutures are removed whilst the assistant holds the tube in position. The tube will usually have had the cuff deflated for some time prior to decannulation, or be of the un-cuffed type. Suction is performed and the tube is removed in expiration, to try and ensure any secretions are coughed out.

The stoma site can be inspected, swabbed and cleaned as necessary. Most stomas will heal well provided that the general condition and nutritional status of the patient is good, and the stoma is kept dry and infection free. The diameter of the stoma may be expected to shrink by around 50% in the first 12 hours following removal of the tube. Stomas may heal completely in as little as 3 to 4 days, but may take several weeks. A small number may require formal surgical closure. Initially the stoma is covered with sterile gauze and an appropriate semi-permeable dressing (such as tegaderm™ or opsite™).

On coughing and talking, it is common for the dressing to bulge outwards whilst the stoma remains patent. The patient can place a finger over the dressing to prevent this. The dressing is usually inspected and changed at least daily. The patient and their carers must be instructed to seek appropriate attention if there is a residual leak in expiration, redness, wetness or discharge from the stoma over the days following decannulation.



Documentation

Local policy and practice must ensure that:

- The team performing a decannulation document all associated events in patient notes immediately following the procedure
- The team performing a decannulation document if they plan to re-review routinely or have discharged from caseload.

- If the team performing the decannulation have discharged the patient from review, they must provide written criteria and contact details for urgent re-referral should the patients condition deteriorate
- The level of respiratory observation required is identified
- The ward MDT have written guidance of how to access expert help in an emergency at all times
- Tracheostomy emergency equipment should be left at the bedside for a further 48 hours following decannulation

Post –decannulation

Following the removal of the tracheostomy tube, the patient is left with an opening into their trachea. This needs protection from entry of water or foreign bodies and needs assistance to close. An airtight dressing is required to prevent the ongoing passage of air through the tract (tracheo-cutaneous fistula) which will delay wound healing. Where possible, the patient should be encouraged to apply gentle pressure to the dressing whilst coughing or speaking. This will reduce the air pressure through the fistula to the underside of the dressing, which will loosen the dressing's contact with the skin, necessitating frequent dressing changes. The wound should be airtight within two weeks and if not, then a referral to the Ear, Nose and Throat team should be considered. Tissue forming along the fistula may require specialist assessment and treatment.

The use of a standardised weaning procedure should reduce the risk of patients 'failing' a decannulation attempt. However, a patient's condition can alter which may necessitate consideration for re-insertion of the tracheostomy. The emergency tracheostomy equipment should be left at the patient's bedside for 48 hours following decannulation to enable access to tracheostomy equipment for this period post decannulation. This is particularly important to maintain for those patients transferred to other clinical settings within 48 hours post decannulation.



Summary

The table below summarises key actions related to decannulation and their rationales (adapted from the UK NPSA expert working group)

Action	Rationale
Discuss the procedure with the patient. Have communication aids available e.g. interpreters.	To ensure consent, understanding and reduce anxiety.
Initiate continuous oxygen saturation monitoring for procedure	To identify and alert staff to de-saturation following procedure.
Ensure patient sitting in an upright position.	To promote chest expansion and reduce risk of aspiration.
Stop any naso-gastric feed or oral intake for 4 hours pre-procedure. Local policy may allow aspiration of NG tube.	To minimise the risk of aspiration and / or acute desaturation.
While holding onto the tracheostomy tube, undo ties and remove all dressings in preparation for removal. Ensure cuff is deflated if present.	To prepare tube for removal
Remove the tracheostomy on maximal inspiration or as per local policy.	To minimise the risk of alveolar collapse.
Prior to dressing application: check for signs of respiratory distress and confirm patient can voice/cough whilst stoma occluded	To monitor for complications to tube removal prior to dressing application
Using a sterile technique, clean the stoma site with saline and dress site with a semi-permeable occlusive dressing.	To reduce the risk of infection and optimise wound healing.
Ensure close observation of patients' respiratory status post-procedure as per local guidelines.	To reduce patient risk.
Update MDT post-procedure and clarify further monitoring requirements, dressing needs and alert to possible complications	To optimise team communication and safe patient rehabilitation
Redress site at least every 24 hours. Measurements of the closing fistula may assist with objective assessment of a slow healing wound.	To monitor for appropriate wound closure (estimated at 7-14 days)