

STOMA/TRACHEOSTOMY MANAGEMENT-ADULT & PEDIATRIC

INTRODUCTION: The majority of patients needing either a Laryngectomy stoma or tracheostomy tube as their primary airway require constant vigilance and effort in maintaining patency. Cardio-respiratory arrest most commonly results from an obstruction within the stoma or tracheostomy. Obstructions may be due to thick secretions/mucous plug, blood clot, foreign body, or kinking or dislodgement of the tube or stoma. Early recognition and prompt application of appropriate care are required to re-establish airway patency and provide adequate oxygenation/ventilation.

WARNING SIGNS: Early warning signs of obstruction include Tachypnea, tachycardia, and desaturation. Cyanosis, bradycardia and apnea are late signs, do not wait for them to develop before intervening.

INDICATIONS: Endotracheal suctioning is necessary to remove mucous, maintain a patent airway, and avoid blockages. Indications can include:

- ✓ Audible or visual signs of secretions in or around the stoma or tube
- ✓ Signs of respiratory distress
- ✓ Suspicion of blocked or partially blocked stoma or tube
- ✓ Weak or ineffective cough
- ✓ Increases in required ventilation pressures (in ventilated patients)
- ✓ Request by patient for suction

COMPLICATIONS: Complications resulting from prehospital treatment can include:

- ✓ Airway obstruction
- ✓ Subcutaneous and mediastinal emphysema
- ✓ Aspiration
- ✓ Respiratory and cardiovascular collapse
- ✓ Blocked tube
- ✓ Dislodged tube
- ✓ Bleeding
- ✓ Tracheo-esophageal fistula
- ✓ Tracheal trauma
- ✓ Pneumothorax
- ✓ Infection

CONSIDERATIONS:

- ✓ Tracheal suctioning should be carried out regularly for patients with a stoma/tracheostomy. The frequency will vary between patients and is based on individual assessment.
- ✓ Tracheal damage may be caused by suctioning. This can be minimized by using the correct appropriate sized suction catheter and only suctioning within the tracheostomy tube.

TRACHEOSTOMY TUBE SIZE (MM)	RECOMMENDED SUCTION CATHETER SIZE (Fr)
3 mm	6
3.5 mm	8
4 mm	8
4.5 mm	10
5 mm	10
6 mm	10-12
7 mm	14
7.5 mm	14-16
8 mm	14-16
9-10 mm	16

- ✓ The pressure setting for tracheal suctioning (suction machine pressure for small children 50-100 mmHg, for older children and adults, 100-200 mmHg) to avoid tracheal damage.

PROCEDURE

1. Explain the procedure to the patient.
2. Maintain appropriate PPE throughout procedure
3. Slightly elevate the patient's head and shoulders.
4. Assemble needed equipment and power on suction device.

5. Instill only a small volume of sterile normal saline into the tracheostomy tube if needed for thick or dry secretions. Excessive use of saline is not recommended.
6. Only use saline if the mucous is very thick, hard to cough up, or difficult to suction. Use 1-2 ml for each instillation.
7. Using aseptic technique, carefully insert catheter into the tracheal tube or stoma. Do not apply suction, while gently advancing until resistance is felt. This will usually be 4 to 5 inches for an adult. Withdraw the catheter about 2 cm before starting suction.
8. Place thumb over opening in catheter to create suction and use a circular motion (twirl catheter between thumb and index finger) while withdrawing the catheter to allow mucous to be removed from all areas. **Avoid suctioning longer than 10 seconds.** Suction normal saline from a container if needed to clear catheter.
9. Allow the patient to rest and breathe, then repeat suction, if needed, until clear. Allowing 30 seconds between suction attempts. After 3 suction attempts, the patient should be allowed to rest for 5-10 minutes before resuming suctioning.
10. Oxygenate and ventilate as needed. If equipment is available, monitor patient's SPO₂, ETCO₂, and cardiac rhythm before, during, and after the procedure.

SKIN CARE: It is important to routinely clean the skin around the opening of the tracheostomy (stoma) following suctioning. This will help prevent skin irritation and the buildup of secretions. Gently remove any secretions surrounding the stoma using cotton-tipped applicators, damp washcloth, or moistened paper towels. Avoid using facial tissue or any material that has been cut, which can create particles that can irritate the airway. Cover the stoma with a dry 4x4 gauze dressing, folded, if necessary.

TIE CHANGES: If used, tracheostomy tubes are secured using either twill or Velcro® type ties. Have two persons available due to risk of tracheostomy tube dislodgment when attending to tie changes.

TWILL TIES PROCEDURE:

1. Leave the old ties in place. Pull on the end of the twill tie through either neck flange hole. Adjust the ends of the tie until one is 3 to 4 inches longer than the other side.
2. Bring both ends of the tie around the neck and insert the longer end of the tie through the other neck flange hole.
3. Pull the tie snug. Place one finger between the tie and the neck. Tie the two ends together using a square knot. Do not use a bow.
4. Cut the ends of the ties leaving only 1 to 2 inches.
5. Carefully cut and remove soiled ties.

VELCRO® TIES

1. Follow manufacturer's directions for measuring and applying the tie.
2. Use fingers to hold both sides of the neck plate of the tracheostomy tube in place. Release 1 side of the Velcro® fastener.
3. Insert and secure the Velcro® strip in the same neck plate hole.
4. With fingers still holding both sides of the neck plate, remove the old Velcro® tie from the other side.
5. Insert and secure the clean Velcro® strip into the neck plate. Remove the old Velcro® tie from the other side.
6. Adjust the clean ties to fit your neck. You should be able to fit 1 to 2 fingers between the tie and neck.