

	Policies and Procedures Title: SUCTIONING PEDIATRIC/NEONATAL TRACHEOSTOMY PATIENTS - <u>NON-VENTILATED</u> I.D. Number: 1051
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DEFINITION:

Fresh Tracheostomy Stoma – Stoma that has not yet had an initial tracheostomy tube change and is less than 7-10 days since operative placement

Non-Established Tracheostomy Stoma – Stoma that has had an initial uncomplicated tracheostomy tube change (usually done at 7 – 10 days post-op, but is not yet 14 days post-op).

Established Tracheostomy Stoma – Stoma that is more than 14 days post-op and that has had 2 uncomplicated tracheostomy tube change

Qualified Personnel for Suctioning Artificial Airways:

- **For Fresh Tracheostomy Stoma:** Certified Registered Nurse (RN)/Grad Nurse (GN)/Registered Psychiatric Nurse (RPN) who has the knowledge and skill in suctioning artificial airways on targeted units, Registered Nurse (Nurse Practitioner) RN(NP), Registered Respiratory Therapist (RRT), Physiotherapist (PT), Paramedics and Students (RN, RT, PT, EMT) under direct supervision
- **For Non-Established Stoma:** as above, and certified Licensed Practical Nurse (LPN)/Grad Licensed Practical Nurse (GLPN) who has the knowledge and skill in suctioning tracheostomy tubes on targeted units (refer to SHR Nursing Policy & Procedure Manual: Licensed Practical Nurse (LPN) Added Skills (Assigned Functions) #1071).
- **For Established Stoma:** As above

1. PURPOSE

- 1.1 To maintain airway patency of trachea in non-ventilated pediatric/neonatal patients.
- 1.2 To minimize the risks of hypoxemia, infection & trauma

2. POLICY

Personnel who may suction	<ul style="list-style-type: none"> • Refer to section above “Qualified Personnel for Suctioning Artificial Airways • Families may suction their own child after completing education and demonstrating the skill or if they do so at home
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<p>Assess patient's need for suctioning</p>	<ul style="list-style-type: none"> • Increased work of breathing or respiratory rate • Increased heart rate or cyanosis • Decreased SpO2 • Course breath sounds, changes in air entry • Coughing • Audible &/or visible secretions in airway
<p>Types of suctioning</p>	<ul style="list-style-type: none"> • Premeasured technique – inserting a suction catheter to a premeasured depth with the distal tip just exiting the end of the tracheostomy tube • Deep suctioning – Special circumstances (copious thick secretions or partially obstructed tracheostomy tube) may necessitate occasional use of deep suction (i.e. 1.5 cm past the pre-measured depth). In general, this method should not be used because it can cause epithelial damage. Avoid inserting suction catheter until resistance is felt as this causes trauma to carina
<p>Measurement of suction depth</p>	<ul style="list-style-type: none"> • Use length of tracheostomy tube indicated on box plus measured distance of tracheostomy above stoma (add length of tracheostomy adapter if used). • Measure using a tracheostomy tube the same size as the patient's • Suction Depth measurement is posted at bedside and documented in patient care plan. Suction catheter should only be inserted to this depth. Utilize cm markings on catheter or bedside measuring tape to determine suction depth with each suction pass.
<p>Special considerations</p>	<ul style="list-style-type: none"> • Equipment must be available at all times for suctioning, manual ventilation, and recannulation, including when child is away from bedside or off unit <ul style="list-style-type: none"> ◦ Tracheostomy obturator, tracheostomy tube the size the child is using and one size smaller should be with the child in a visible or readily accessible location at all times • Perform hand hygiene before and after patient contact and use PPE (gloves, faceshield mask as minimum and gown if there is a risk of contamination with secretions) • Strict sterile suction technique must be used for tracheostomies the first 14 days post-insertion (sterile suction catheter and gloves) • PICU – sterile technique is utilized at all times • Modified sterile suction technique may be used for established tracheostomies more than 14 days post-insertion (sterile suction catheter and non-sterile gloves ensuring portion of suction catheter entering tracheostomy tube does not contact any unclean surface) • Tracheostomy tube suctioning should be performed at least twice daily (morning and bedtime) and as needed based on clinical assessment to assure tube patency. • Maintaining adequate hydration and humidification of inspired gases enhances secretion mobilization and facilitates removal of secretions. • Routine instillation with sterile normal saline is not recommended as this introduces pathogens from tracheostomy tube. It may be considered if thick secretions are causing crusting of the inner lumen of tracheostomy tube and to facilitate catheter passage. Volume should not exceed 0.5 ml in infants and 1 ml in pediatrics • When suctioning a patient with a fresh tracheostomy stoma, 2 qualified HCP's are required to prevent dislodgement of the tube. • Suction catheter of ½ the diameter of tracheostomy tube is recommended (see Appendix A) • Patient/family teaching prior to and during suction procedure

Hyperoxygenate prior to suctioning if clinically indicated	<ul style="list-style-type: none"> Increases the amount of oxygen delivered to the patient Patients requiring high supplemental O₂ or severely desaturating Previous detrimental effects from suctioning
Suctioning in the community setting	<ul style="list-style-type: none"> Hand hygiene before suctioning Suction catheters are used for multiple suction passes and cleansed with normal saline Discard suction catheter every 24 hours or if dropped on the floor PPE can be used if patient is ill to protect the care-giver from illness

3. PROCEDURE

3.1 Assess the client’s respiratory status

3.2 Ensure that the following equipment is at the bedside and in working order:

- Resuscitation bag of appropriate size with face mask
- Oxygen flow meter
- suction regulator with collection canister and tubing
- suction catheters of appropriate size (see Appendix A)
- mask and face shield and other PPE as required
- gloves (**Sterile** if less than 14 days post-op; consider **Clean** if greater than 14 days post-op)
- stethoscope
- sterile saline to rinse catheter tubing

3.3 Check suction equipment and set vacuum pressure to appropriate level for child’s age (80 – 120 mmHg adolescents, 80 – 100 mmHg for children and 60 – 80 mmHg for neonates).

3.4 Explain procedure to patient/family.

3.5 Position patient with head of bed elevated 30o or in appropriate position for postural drainage, unless contraindicated.

3.6 Perform hand hygiene and don appropriate PPE

3.7 Open suction catheter package maintaining the sterility of catheter. Attach catheter to suction tubing while keeping patient end sterile.

3.8 Disconnect the patient from humidity or oxygen source ensuring the connections are kept clean.

3.9 Hyperoxygenate patient prior to suctioning if indicated

3.9.1 Methods of hyperoxygenation include:

- 3.9.1.1 Use of a manual resuscitation device connected to oxygen flow meter at flush
- 3.9.1.2 Increasing the oxygen flow of the oxygen delivery device in use
- 3.9.1.3 Have the client take 2-3 deep breaths while receiving a higher than normal concentration of oxygen

Note: In patients with visible secretions, an initial pass of the catheter should be made first to quickly clear the tube of any visible or audible secretions before any bag ventilation breaths are delivered

Note: To deliver a manual breath when secretions are visible in the tube only forces the secretions into the more distal parts of the airway

3.10 Without applying suction, advance catheter to pre-measured suction depth.

Note: Suctioning while inserting and removing the catheter may be necessary if there are visible secretions, audible gurgling or patients requiring hyperoxygenation.

3.11 Apply suction while withdrawing and rotating the catheter.

Note: Duration of suctioning should not exceed 5 seconds when continuous suction applied¹.

3.12 Between passes, allow the patient to rest and reoxygenate for 30 seconds between suction passes. Reconnect patient to oxygen source if required. Hyperoxygenation with manual resuscitation bag and high flow oxygen may be required if SpO₂ is low, patient is cyanotic or showing other signs of severe respiratory distress.

3.13 If further suctioning is required, repeat procedure from 3.10 – 3.13. Clear the catheter and connecting tubing with sterile normal saline before reinserting and at the end of procedure.

3.14 Use the same catheter to suction the nose/mouth if indicated **provided the mouth/nose is suctioned last**.

Note: The mouth/nose is considered contaminated with normal bacterial flora. Oral/nasal suctioning should never precede tracheal suctioning if the same catheter is used.

3.15 Auscultate the chest to determine effectiveness of suctioning and monitor respiratory rate, respiratory effort, oxygenation, heart rate, color, comfort, and safety.

3.16 **Document on appropriate record**

- amount, color, and consistency of secretions
- patient's tolerance of procedure, vital sign changes
- actions taken if problems encountered during suctioning
- air entry and breath sounds before and after suctioning
- specimen(s) obtained and sent

4. REFERENCES

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Related SHR Policies

SHR Nursing Policy and Procedure Manual:

- Licensed Practical Nurse (LPN) Added Skills (Assigned Functions) #1071
- Oxygen Administration #1115
- Special Nursing Procedure #1120
- Suctioning Adult Clients With Artificial Airways #1019

Appendix A

Tracheostomy Tube and Suction Catheter Chart

Tracheostomy Tube (inner diameter in mm)	Suggested Suction Catheter Size (French) (Note: Approximate 2X Tube Size)
2.5	5
3.0	6
3.5	6
4.0	8
4.5	8
5.0	10
5.5	10
6.0	12
6.5	12
7.0	14
8.0	14

Inner Diameter Size of Tracheostomy Tube

Tracheostomy Tube Size	I.D.	Suggested Suction Catheter Size	Trach Description
3.0 NEO	3.0mm	6	Neonatal Trach, (cuffless)
3.5 NEO	3.5mm	6	
4.0 NEO	4.0mm	8	
4.5 NEO	4.5mm	8	
3.0 PED	3.0mm	6	Pediatric Trach, (cuffless)
3.5 PED	3.5mm	6	
4.0 PED	4.0mm	8	
4.5 PED	4.5mm	8	
5.0 PED	5.0mm	10	
5.5 PED	5.5mm	10	
4DCT	5.0mm	8	Low pressure Cuffed Trach with <u>disposable inner cannula</u>
6DCT	6.4mm	12	
8DCT	7.6mm	14	
4DCFS	5.0mm	8	Cuffless Trach with <u>disposable inner cannula</u>
6DCFS	6.4mm	12	
8DCFS	7.6mm	14	