
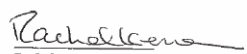


GUIDELINES ON SUCTIONING A CHILD WITH A TRACHEOSTOMY SELF-VENTILATING IN ROOM AIR


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1.0 Introduction

Suctioning of a tracheostomy is necessary to maintain a patent airway where a child cannot cough and clear their own secretions effectively. The goal of tracheal suctioning is maximal secretion removal with minimal hypoxia and tissue damage.

A function of the upper airway is to humidify, heat and filter inspired air. The presence of a tracheostomy tube bypasses these functions, which may result in secretions becoming dry and thick which may compromise the patient's airway. Children's airways are small, therefore a small decrease in the airway diameter caused by secretions can greatly increase airway resistance and work of breathing.

There are many associated risks and complications with suctioning, therefore a sound knowledge of the procedure and its effects are a pre-requisite prior to undertaking the process.

Suctioning may be performed by healthcare professionals or by parents / caregivers proficient in tracheostomy care. It is only performed when there is a clear indication for it and not on a routine basis.

2.0 Definition of suctioning of children with tracheostomy self-ventilating in room air

3.0 Definitions / Terms


Suctioning is the mechanical aspiration of pulmonary secretions from a patient with an artificial airway. (American Association of Respiratory Care (AARC) 2010).

4.0 Applicable to

All nursing staff employed by OLCHC that are involved in the suctioning of children with a tracheostomy self-ventilating in room air

5.0 Objectives of the Guidelines

- To standardise the suctioning of children with a tracheostomy self-ventilating in room air
- To ensure and maintain patient safely when suctioning of children with a tracheostomy self-ventilating in room air
- To ensure research based knowledge underpins nursing practice

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6.0 Indications for suctioning children with a tracheostomy Self-ventilating in room air

- Inability to clear secretions effectively
- Sound of mucous bubbling in the tracheostomy tube
- Visible secretions at the tracheostomy port
- Secretions felt on palpation of thorax
- Increased work of breathing
- Restlessness /Agitation
- Change of colour (cyanosis, pallor)
- Decreased oxygen saturation levels

7.0 Complications associated with suctioning


Correct suctioning technique will assist in the prevention of complications, these can include:-

- Anxiety & fear
- Hypoxia
- Bronchospasm
- Bradycardia
- Vasovagal response
- Cross Infection
- Mucosal trauma
- Atelectasis


8.0 Guidelines

Equipment


- Suction Unit (Wall mounted or Portable unit with variable vacuum control)
- Tracheostomy Emergency Case
- Connection Tubing
- Appropriate sized suction catheters
- Selection of clean disposable gloves
- Alcohol hand rub
- Goggles if necessary (following risk assessment)
- Sterile water (for flushing suction connection tubing and galipot)
- Oxygen supply with Oxygen attachment for Thermovent T and non rebreathe mask.
- Disposable apron
- Waste bag - bin
- Pre-measured suction guide(measuring tape marked with the depth for suctioning – individual patient use only)

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PREPARATION FOR PROCEDURE	RATIONALE & REFERENCE
<p>Perform a comprehensive respiratory assessment and document on the child's nursing notes</p> <p>In children with no evidence of secretions, suctioning needs to be performed a minimum of once per shift.</p> <p>N.B. If a fenestrated tube is in situ an un fenestrated inner cannula needs to be inserted prior to suctioning.</p> <p>Explain the procedure to the child and family in age and/or developmentally appropriate language.</p> <p>Prior to the procedure turn the suction unit on, check the vacuum pressure and set to the appropriate level, according to the child's age.</p> <ul style="list-style-type: none"> • Neonate up to four weeks (60 – 80mmhg) • Paediatric 4 weeks – 3yrs (80 – 100mmhg) • Older child > 3years (100 – 120mmhg) 	<p>Suctioning should be done on the basis of clinical assessment (MacQueen et al 2012)</p> <p>To ensure tube patency (American Thoracic Society 2000, Great Ormond Street Hospital (GOSH) 2012)</p> <p>To prevent the catheter going through the fenestration and causing trauma to the posterior tracheal wall.</p> <p>In order:-</p> <ul style="list-style-type: none"> • to obtain verbal consent • to facilitate the child to verbalise any concerns they may have • to inform the child and family of the procedure • to gain co-operation during the procedure • to reduce stress and anxiety. <p>(Hockenberry & Wilson 2011, Barron and Hollywood 2012)</p> <p>Excessively high pressure can damage the tracheal mucosa and may induce hypoxia. If the suction pressure is too low it will be ineffective (Hutchins & Wilson 2010, Dougherty and Lister 2011).</p> <p>To enable gas flow between the suction catheter</p>

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<p>CATHETER SELECTION</p> <p>The correct size suction catheter must be selected and attached to the suction connection tubing. The suction catheter must not exceed more than 50% of the internal diameter of the airway.</p> <p>The suction depth is determined prior to the suction procedure. The catheter is advanced to approximately 0.5cm beyond the tip of the tracheostomy tube (Refer to the Suction Guide OLCHC 2015)</p>	<p>and the tracheostomy tube, thus minimising hypoxia and reducing the risk of atelectasis. (Mc Kelvie 1998, Dougherty and Lister 2011, Wilson 2011)</p> <p>Premeasured technique is critical to avoid epithelial damage (American Thoracic Society 2000).</p>
<p>ASSESS THE NEED FOR SUCTIONING</p>	<p>RATIONALE & REFERENCE</p>
<p>Observe the child respiratory status prior to suctioning</p> <ul style="list-style-type: none"> • Effort - Respiratory Rate, recession, grunting, accessory muscles and nasal flaring • Efficacy - Breath sounds, chest expansion • Effects of inadequate respirations – Heart Rate, Oxygen saturations, skin colour and mental status • Presence and type of secretions and cough 	<p>To identify a baseline to which further observation can be compared against (Glasper and Richardson 2006) and to determine the need to perform tracheostomy suctioning</p>
<p>PERFORMING SUCTION</p>	<p>RATIONALE & REFERENCE</p>
<p>Standard precautions must be used:</p> <ul style="list-style-type: none"> • Decontaminate hands • Apply an apron • Place a glove on the dominant hand • Adopt aseptic non-touch technique. • Wear goggles if necessary (following risk assessment) <p>Remove the catheter from its sheath,</p>	<p>To adhere to standard infection control precautions and prevent the cross of infection (ICP Department 2013)</p> <p>To maintain sterility of the suction catheter (Nurse Practice Committee 2011)</p>

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<p>ensuring that the end of the catheter is not touched.</p> <p>Identify the suction depth and maintain it by keeping thumb and the index finger at this point.</p> <p>Remove the humidification device or speaking valve</p> <p>Gently introduce the suction catheter through the tracheostomy tube to the pre measured depth using the premeasured suction guide.</p> <p>Do NOT apply suction during insertion.</p> <p>Apply suction by placing the thumb of the non-dominant hand over the suction port as the catheter is gently withdrawn. Negative pressure should only be applied for the recommended duration: < 5 seconds for neonates <10 seconds for children and adolescents</p> <p>The suction catheter should not be rotated on withdrawal.</p> <p>Constant observation of the child during suctioning is essential; practitioners should observe the child's respiratory status</p> <p>If further suctioning is clinically indicated, the same suction catheter can be used twice. However, if there are visible</p>	<p>There should be no contact between the suction catheter and anything other than the practitioner's gloved hand and the child's tracheostomy. To prevent contamination of the tracheostomy tube</p> <p>To facilitate the suction catheter to enter the tracheostomy tube</p> <p>This may cause mucosal irritation, damage and hypoxia (MacQueen et al 2012)</p> <p>There is increased risk of hypoxia and atelectasis in children and infants due to smaller residual lung volume (GOSH 2012)</p> <p>Suction catheters have distal and lateral holes allowing circumferential suctioning (AARC Guidelines 2007)</p> <p>To assess for an improvement or deterioration in the child's respiratory status.</p>
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<p>secretions on the outside of the suction catheter or the catheter is occluded, do not reinsert.</p> <p>A sterile suction catheter is used for each suction episode.</p> <p>Discard the used suction catheter by coiling the catheter in the gloved hand and inverting the glove over the catheter and removing both. Discard both in the appropriate bin.</p> <p>Flush the suction connecting tube with sterile water post procedure, if there are secretions evident in the connection tubing</p> <p>Turn off the suction unit</p>	<p>To reduce the risk of cross infection (ICP Department 2011)</p> <p>To reduce the risk of cross infection (ICP Department 2011)</p> <p>To clear the suction connecting tube of secretions</p>
POST SUCTIONING	RATIONALE & REFERENCE
<p>Perform a respiratory assessment to identify if the child requires further suction.</p> <p>Re-apply humidification device or speaking valve as appropriate</p> <p>Allow a recovery period between further suction episodes.</p> <p>Remove apron and gloves and discard in the appropriate bin and</p> <p>Decontaminate hands</p> <p>Reassure, praise and thank the child.</p>	<p>To evaluate the effectiveness of the procedure.</p> <p>To ensure that satisfactory oxygen levels can be regained.</p> <p>To promote safety and prevent cross infection (ICP Department 2012, OLC HC 2014)</p> <p>To adhere to standard infection control precautions and prevent the cross of infection (ICP Department 2013)</p> <p>To help maintain a trusting relationship between the child and nurse (Hockenberry and Wilson 2011)</p>

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Document procedure and findings in the child's nursing notes and reporting any deviations from normal.	To maintain an accurate record of nursing care and to facilitate communication and continuity of care (Barron and Hollywood 2010). To ensure safe practice and maintain accountability (An Bord Altranais 2002)
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9.0 Implementation Plan

Communication and Dissemination

- Guidelines will be posted on hospital Intranet
- Hard copies of this Guideline are available in the Nurse Practice Guidelines Folder in each clinical area

Training

- Education and training will be delivered in the clinical area for nursing staff who suction children with tracheostomy who are self-ventilating in room air in OLCHC
- Education is included in induction packages in the clinical area for nursing staff who suction children with tracheostomy who are self-ventilating in room air in OLCHC

10.0 Evaluation and Audit

Monitoring of compliance is an important aspect of procedural documents. However, it is not possible to monitor all procedures. Therefore, this guideline will be reviewed on a three yearly basis or when indicated by a change in best practice using the following methods:

- Feedback from nursing staff who suction children with tracheostomy who are self-ventilating in room air in OLCHC on this guideline will contribute to ongoing guideline development.
- Monitoring Near Misses/ Adverse Incidents in accordance with OLCHC

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