**Tracheal suctioning-Clean Technique**

**Things to consider:**

* When caring for a student who has a tracheostomy, the nurse should always know the reason for the tracheostomy, the child’s underlying health conditions and whether the child needs the tracheostomy to breathe
* Attempt to provide the student with as much privacy as possible, given the urgency of the situation
* Is suctioning necessary or can the student “cough out the secretions?”
  + Encourage the student to cough to expel the secretions
  + If secretions clear and there are no signs of respiratory distress, do not suction
* Should always have “GO BAG” (Emergency Travel Bag) accessible when completing any tracheostomy procedure
* “Deep suctioning” up to or beyond the tracheal carina (point of bronchial bifurcation and tissue resistance) should not be indicated in a school setting, as it may cause epithelial damage
* Each student will have an absolute length of catheter insertion, “measured length”
  + When suctioning, the catheter should not be inserted deeper than the absolute length of catheter insertion
* When suctioning, determine what the family has been taught related to applying suction on insertion and when withdrawing catheter or just when withdrawing
* The child can be suctioned with clean technique or sterile technique per child’s healthcare plan

**Supplies:**

“GO BAG” (Emergency Travel Bag) Equipment:

The essential equipment to be kept with the student at all times is as follows:

* gloves
* portable oxygen with appropriate sized Ambu-bag
* appropriate size Ambu-bag facemask (for emergencies when unable to reinsert a new tracheostomy tube
* portable suction machine that can operate with battery or electricity
* clean suction catheters
* sterile saline vials
* water-based lubricant
* two spare tracheostomy tubes
  + one the size the student currently uses
  + one that is a size smaller in the event that the tube needs to be changed and there is difficulty passing it through the stoma
* obturator, if applicable
* spare tracheostomy ties
* blunt scissors
* emergency phone numbers
* pulse oximeter — may be optional if student is not on oxygen or mechanical ventilation

Additional needed supplies**:**

Student’s individual health plan/healthcare provider’s order

Stethoscope

Cup of tap water

Personal protective equipment

* Goggles
* Mask
* Gloves

**Procedure:**

1. Assemble supplies
2. Review healthcare provider’s order/ Student’s individual health plan
3. Wash hands
4. Perform respiratory assessment
   1. The respiratory assessment should be an ongoing process to determine:
      1. How well the student is tolerating the procedure
      2. The amount of time and suction attempts that are clinically indicated
5. Given the urgency and needs of the student; position the student to provide for the most privacy
   1. students in wheelchairs or other supportive seating devices can remain sitting upright or reclined up to, but not exceeding, semi-fowlers or 45 degrees
   2. students who are lying should be turned on their side (this position may be commonly associated with a student experiencing a seizure who may require supplemental oxygen and/or suctioning)
6. Explain the procedure to the student at a level the student understands
7. If ordered, place pulse oximeter on student’s finger, toe or ear lobe during and after the procedure
8. Turn on suction machine and check for function
9. For suction machines that have suction measurements in mm Hg
   1. Ensure the suction machine has the appropriate level of subatmospheric pressure:
      1. standard maximal pressure for children ranges from 80–100 mm Hg; and
      2. standard maximal pressure adolescents ranges 80-120 mm Hg
      3. maximal pressure may be determined by turning on suction and occluding extension tubing by folding it in half
      4. pressure reading on the gauge when the tubing is completely occluded is the maximal suction pressure
10. For suction machines that have a dial with numbered suction settings (i.e. 1, 2, 3), use the lowest level of suctioning that will remove the secretions
    1. Start at the lowest suction level and increase as needed
11. Put on clean gloves
12. Attach top of catheter to suction tubing
13. Hold the suction catheter at the absolute length of catheter insertion, “measured length”
14. The use of normal saline to lavage the tracheostomy tube is based on the Individualized Health Plan and, if indicated, to assist with the removal of thick secretions, needs to be used judiciously
15. Remove tracheostomy mask, artificial nose or ventilator connection and promptly insert catheter while gently rotating within the cannula
16. Advance catheter into tracheostomy tube to the “measured length” with or without suction (based on how the procedure is completed in the home setting and healthcare provider’s order)
17. Twirl catheter between fingers as it is pulled out of tracheostomy tube, staying in no more than 5 seconds
    1. When suction catheter is inserted into tracheostomy tube, the student’s airway is occluded, total suction time should not exceed 5 seconds
18. Suction a small amount of sterile saline with the suction catheter to clear any residual debris/secretions
19. Allow student to rest and return to normal breathing
    1. If student was receiving oxygen and humidification by mask before the suctioning, reapplication of the mask between suctioning passes or 3-5 breaths with manual resuscitator bag with oxygen attached, may be warranted
    2. If student is not on oxygen, give 3 to 5 extra breaths with the resuscitator bag, if needed
20. Repeat suctioning in above order (10-14) until secretions are removed
    1. Note the color, presence of odor, and consistency of secretions
21. Complete suctioning
22. For students on oxygen
    1. Replace mask, artificial nose or ventilator connection on student
23. For students without oxygen:
    1. Give 3 to 5 extra breaths with the resuscitator bag, if needed
24. Assess respiratory status
25. Rinse suction catheter with ½ strength hydrogen peroxide or vinegar water; then rinse catheter with sterile water (or procedure used by family)
26. Place suction catheter in a clean container
    1. The suction catheter can be used up to 8 hours
27. Remove gloves
28. Rinse suction machine tubing with tap water
29. Wash hands
30. Document assessment, procedure, and outcomes in student’s healthcare record
31. Report any concerns to parents/guardian and healthcare provider
    1. Such as green/yellow or foul smelling secretions
32. Replenish supplies as needed

**Procedure for cleaning suction catheter: See above #25**

**References:**

American Association for Respiratory Care. (2010). AARC Clinical Practice Guidelines. Endotracheal suctioning of mechanically ventilated patients with artificial airways 2010. *Respiratory Care,* 55(6),758-64.

American Thoracic Society. (2000). Care of the child with a chronic tracheostomy. *American Journal of* *Respiratory & Critical Care Medicine*, 1, 297-308.

Bowden, V. R., & Greenberg, C. S. (2012). *Pediatric nursing procedures (Third Edition).* Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins.

Children’s Hospital of Wisconsin. *Caring for Kids with Tracheostomies: Suctioning Secretions*.

Cincinnati Children’s Hospital. (2011). *Basic Pediatric Tracheostomy Care*. Accessible at: <http://www.cincinnatichildrens.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=88057&libID=87745>

Connecticut State Department of Education. (2012). *Clinical Procedure Guidelines for Connecticut School Nurses.* Available at: <http://www.sde.ct.gov/sde/lib/sde/pdf/publications/clinical_guidelines/clinical_guidelines.pdf>

Hootman, J. (1996). National Association of School Nurses. *Quality Nursing Interventions in the School Setting*.

Porter, S., Haynie, M.D., Bierle, T., Caldwell, T. & Palfrey, J. (1997). *Children and Youth Assisted by Medical Technology in Educational Settings. Guidelines for Care. Second Edition.* Paul H. Brookes Publishing Co., P.O. Box 10624, Baltimore, MD 21285-0624.