

Tracheal Suctioning-Clean Technique -Originally Published by the Wisconsin Improving School Health Services (WISHeS) Project

Things to consider:

- When caring for a student who has a tracheostomy, the school 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
- The school nurse should always have the Emergency Travel Bag (see below) 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", as indicated by the health care provider
 - 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

COVID-19 Considerations:

- It is highly recommended that for persons who have impaired airway clearance or require significant respiratory suctioning, the school nurse and caregiver consult with primary/specialty healthcare provider for considerations on returning to school.
- Identify a separate and private area where aerosol-generating procedure(s) are safe to occur.
 - Note ventilations concerns with identified location
- PPE for such procedures should include long-sleeved gown, N95, face shield, eye protection, and gloves
- Closed suction systems should be used where possible.
- Review suction frequency as ordered by health care provider (i.e. suctioning should be limited and as performed as needed instead of on a standardized schedule).
- As tracheostomy suctioning is an aerosol generating procedure it should be completed in a separate room where the child and school nurse are present.
- The door to the room where the procedure is being performed should be closed.
- The room where the procedure was performed should be cleaned after use following CDC guidelines.
- The room where the procedure was performed should remain vacated for the amount of time required per CDC guidelines.

Supplies:**Emergency Travel Bag Equipment:**

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

- portable oxygen with appropriately sized Ambu-bag
- appropriately sized 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:

- gloves
- gown
- respirator
- face shield
- eye protection

Procedure:

1. Assemble supplies
2. Review healthcare provider's order/ Student's individual health plan
3. Perform hand hygiene
4. Put on gown
5. Put on respirator
6. Put on face shield or goggles
7. Put on gloves
8. Perform respiratory assessment
 - a. The respiratory assessment should be an ongoing process to determine:
 - i. How well the student is tolerating the procedure

- ii. The amount of time and suction attempts that are clinically indicated
9. Given the urgency and needs of the student; position the student to provide for the most privacy
 - a. students in wheelchairs or other supportive seating devices can remain sitting upright or reclined up to, but not exceeding, semi-fowlers or 45 degrees
 - b. 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)
10. Explain the procedure to the student at a level the student understands
11. If ordered, place pulse oximeter on student's finger, toe or ear lobe during and after the procedure
12. Turn on suction machine and check for function
13. For suction machines that have suction measurements in mm Hg
 - a. Ensure the suction machine has the appropriate level of subatmospheric pressure:
 - i. standard maximal pressure for children ranges from 80–100 mm Hg; and
 - ii. standard maximal pressure adolescents ranges from 80-120 mm Hg
 - iii. maximal pressure may be determined by turning on suction and occluding extension tubing by folding it in half
 - iv. pressure reading on the gauge when the tubing is completely occluded is the maximal suction pressure
14. 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
 - a. Start at the lowest suction level and increase as needed
15. Attach top of catheter to suction tubing
16. Hold the suction catheter at the absolute length of catheter insertion, "measured length"
17. Lubricate the catheter with normal saline
18. 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
19. Remove tracheostomy mask, artificial nose or ventilator connection and promptly insert catheter while gently rotating within the cannula
20. Advance catheter into the 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)
21. Twirl catheter between fingers as it is pulled out of tracheostomy tube, staying in no more than 5 seconds
 - a. When the suction catheter is inserted into tracheostomy tube, the student's airway is occluded, total suction time should not exceed 5 seconds
22. Suction a small amount of sterile saline with the suction catheter to clear any residual debris/secretions
23. Allow student to rest and return to normal breathing
 - a. 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
 - b. If student is not on oxygen, give 3 to 5 extra breaths with the resuscitator bag, if needed
24. Repeat suctioning in above order until secretions are removed
 - a. Note the color, presence of odor, and consistency of secretions
25. Suction nose and mouth with same catheter the same way
 - a. If re-using catheter for tracheotomy suctioning, use a separate catheter to suction the mouth and nose
26. Complete suctioning

27. For students on oxygen
 - a. Replace mask, artificial nose or ventilator connection on student
28. For students without oxygen:
 - a. Give 3 to 5 extra breaths with the resuscitator bag, if needed
29. Assess respiratory status
30. Rinse suction catheter with ½ strength hydrogen peroxide then rinse catheter with sterile water (or procedure used by family)
31. Place suction catheter in a clean container
 - a. The suction catheter can be used up to 8 hours
32. Rinse suction machine tubing with tap water
33. Remove and dispose of gloves
34. Remove and dispose gown
35. Perform hand hygiene
36. Remove face shield or eye protection [if reusing face shield and eye protection clean face shield and eye protection as directed by manufacturer]
37. Remove and dispose of respirator [or remove and store according to reuse policy and procedure]
38. Perform hand hygiene
39. Document assessment, procedure, and outcomes in student's healthcare record
40. Report any concerns to parents/guardian and healthcare provider
 - a. Such as green/yellow or foul-smelling secretions
41. Replenish supplies as needed

Procedure for cleaning suction catheter: See above #30

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