Factsheet: Tracheostomy

What is it?
A tracheostomy is a surgical opening made in the front of the neck into the trachea, or windpipe. A short tube called a trach is placed into the opening called a stoma. The trach provides a stable airway and allows for secretions to be removed from the lungs. A child then breathes through the trach instead of through the nose and mouth.

What are the types of trachs?
There are several types of tracheostomies that vary in size and purpose. Regardless of brand name, a common tracheostomy will have 3 parts. They include the outer cannula, inner cannula and the obturator used only for insertion. Trach details include:

- **Type**
  - Shiley (Adult, pediatric, neonate size)
  - Bivona (Adult, pediatric, neonate size)
  - Metal
- **Cuff** ordered amount of water or air
- **Inner cannula**
  - Disposable
  - Reusable (cleaned daily)

When do you suction?
Secretions, or mucous in the trach, can build up and thicken making it difficult to breath. Suctioning is a sterile procedure that will remove mucous from the child’s airway. Suctioning may be needed when:

- The child is having trouble breathing
- You hear loud gurgles in the trach
- You see bubbles in the trach
- You feel rattles on the child’s chest or back
- The child is breathing fast or their heart is racing
- The skin is pale, bluish, or grayish color around eyes, nails, mouth
- The child’s vent is alarming high pressure

The child should be suctioned per orders; at least once a shift and PRN. Often, the child can cough up and clear mucous on their own. When suctioning, your suction depth of the catheter is the length of the trach itself. Do NOT suction by simply instilling the catheter until the child begins to cough. This can cause airway trauma.

⇒ Test and set suction for pressure of 80-120 mmHG (general pediatric pressure).
⇒ Gently insert the catheter into the trach, with thumb off suction valve. Place thumb on suction valve to apply suction pressure as you exit the trach.
⇒ Only suction to the premeasured depth.
How do you change the tracheostomy?

1. Check orders for correct trach type and size. Compare that you have the correct trach box. Items inside the clear package are considered sterile.

2. Insert the obturator into the new trach. The obturator is only used for insertion as it makes it easier to guide the trach through the stoma preventing damage to the airway. If applicable, check that the cuff is functioning properly by inflating the cuff using the ordered amount of air or water at the balloon port. Deflate the cuff before insertion. Remember, this is a sterile procedure, so do not touch the end of the tube going into the child's stoma.

3. Lubricate the end of the trach.

4. Position the child as needed to visualize the stoma and airway.

5. When both caregivers are ready, one person will remove the old trach following the tube’s natural curve, using an up-and-out motion.

6. Insert the new trach tube gently, again following the airway’s natural curve, using a back-and-down motion.

7. Hold the trach in place as you remove the obturato. The child cannot breathe with the obturator in place.

8. Wait a few seconds as the child calms and support the new trach using your fingers to stabilize the outside flanges. Secure the trach in place with the trach ties.

9. Inflating the trach cuff if necessary.

10. Stay with the child to assess tolerance of the trach change and respiratory function. The child may need to be suctioned after the trach change.

What are signs and symptoms of respiratory distress?

- Working harder than normal to take a breath
- Fast heart rate
- Rapid, belly breathing
- Pale, or bluish colored skin or fingernail beds
- Crying, irritability, restlessness
- Decreased oxygen saturation from the monitor or machine

What are other trach accessories?

- HME (Heat moisturize exchanger): A filter that attaches to the end of the trach. It works as an artificial nose to warm and humidify the air entering the trach.

- Trach collar: A soft plastic mask that fits over the trach. Ordered for heated trach mist, or blow by oxygen to deliver humidified air or oxygen directly to the trach.

- PMV (Passy Muir Valve): A one-way speech valve which allows air in, but not out. As the valve closes, air then moves around the trach and up through the vocal cords. The valve will twist on, and twist off. Speaking valves should be removed if there is difficulty breathing, or the child is asleep or eating. It will normally follow a protocol established by speech.
SHNIC school nurses information:

Specific health issues for individual health care plans

- Medical diagnosis including reason for tracheostomy
- Baseline assessment including respiratory rate and pulse ox parameters
- Orders for trach type, size, cuff size if applicable
- Orders for suction catheter size and suction depth, when to suction
- Vent settings and/or oxygen orders when applicable
- Student’s ability to assist with trach care (i.e., suctioning, trach change, mucous plugs)
- History of respiratory distress, signs and symptoms of distress specific to the student
- Activity limitations
- Skin assessment of the stoma and neck, including dressings as ordered
- Emergency protocols regarding resuscitation and trach reinsertion
- Education of staff

It is very important to have a working relationship with the student’s private duty nurse. It may be beneficial for the PDN to stop in the health room each morning for the school nurse to complete a quick assessment of student and supplies. A checklist can even be used to document that emergency supplies are accessible and ready to go.

Emergency supplies that should be with student at all times in the EMERGENCY TO-GO BAG:

1. Spare trach
2. Downsize trach
3. Water soluble lubricant or saline
4. Gloves
5. Scissors
6. Trach ties
7. Suction supplies with correct suction catheter size
8. Suction machine
9. Ambu bag with proper connections (trach adaptor and face mask)

Resources & Manuals

A guide for parents: Trach care at home
http://www.childrensmn.org/Manuals/PFS/HomeCare/202137.pdf

Bagging: How to manually ventilate your child
YouTube video: Children’s Hospital Colorado
https://www.youtube.com/watch?v=Nbt_NJFDVuk

Emergency airway care: Plugged tracheostomy tube
YouTube video: Children’s Hospital Colorado
https://www.youtube.com/watch?v=HHrNk4sJUqQ