

Tracheostomy

Background

A tracheostomy is a surgical procedure to create a stable artificial airway to help with breathing. An opening is made in the front of the neck into the trachea (windpipe). A short tube, called a trach, is placed into the stoma to keep the airway open. A child may have a trach related to an underlying condition or disease such as obstruction, muscle weakness, spinal cord injury, or brain injury.

The trach can be suctioned to clear secretions from the airway. It can also be connected to supplemental oxygen and/or a mechanical ventilator for respiratory support. The need for the trach may be temporary or permanent, depending on the child's diagnosis and progress.

A trach will differ by brand, type, and size based on the child's anatomy and need. Most will be made of plastic, silicone, or sometimes metal. The trach will have an outer cannula that acts as a permanent placeholder in the stoma. A larger sized trach may also have an inner cannula that serves as a liner and can be removed, cleaned, or replaced as needed.

A trach can also be cuffed or uncuffed. A cuff is a balloon-like part (inflated with water or air depending on the type) that acts as a seal. A cuffed trach is generally used for mechanical ventilation to prevent air leakage and to prevent leakage of fluids into the lungs. Extra humidity may be necessary to filter, warm, and moisten the air as the child breathes. A heat moisture exchanger (HME) or a trach collar can help keep mucous loose and prevent a plug. Both can also be used with supplemental oxygen as necessary.

Mucous in the trach must be removed to maintain patency of the airway. Tracheal suctioning should be performed based on symptoms which may include difficulty breathing, decreased oxygenation, visible secretions in the airway, or coarse breath sounds. Scheduled or excessive suctioning, not based on need or symptoms, may contribute to increased tracheal secretions and risk of infection. Instillation of normal saline prior to suctioning is generally not considered a routine aspect of care and should only be used to help remove obstructive mucous. The appropriate depth to advance the suction catheter should be predetermined and only the amount of suction necessary to remove secretions effectively should be used.



Planning for trach complications and emergencies is important. Complications include obstruction, accidental decannulation, bleeding, and infection. A student should have back-up trach supplies readily available, often referred to as an emergency trach “to-go” travel bag. Essential supplies should include *at least* two separate trach tubes: one the current order size (same size) and another one size smaller (downsize) in event there is difficulty replacing the current size in the stoma.

Top Takeaways for School

The two most common trach emergency scenarios are accidental decannulation and obstruction (e.g., mucous plug).

An emergency trach “to-go” travel bag should always remain with the student. Maintaining a daily checklist of supplies (e.g., same size, downsize trach) can be helpful.

A suction machine should always remain charged and ready to use.

Supplemental oxygen could require specialized training for safe administration. Storage of oxygen may also need to be considered in the school setting.

It is important to understand the purpose and function of additional devices such as a speaking valve, cap, or ventilator.

Considerations for the Individualized Healthcare Plan (IHP)

- Nursing diagnoses: Impaired gas exchange, ineffective airway clearance and risk for infection
- Respiratory interventions and equipment (consider trach brand/size and downsize, suctioning brand/size, frequency of suctioning, ventilator brand and settings); note location of suctioning, use of private duty nursing if applicable
- Use of specialized equipment, adaptive equipment, and orthotics
- Activity, positioning, transferring (consider precautions and/or restrictions)
- Equipment troubleshooting (consider equipment/device user manual, battery, charger)
- Consider emergency action plans (EAPs) and emergency evacuation plans (EEPs) related to special health care needs, including staff education/training

Discussion Starters for the Educational Team

1. Would the student benefit from evaluations or assessments in any of the following areas: physical therapy, occupational therapy, speech and language therapy, assistive technology, adapted physical education, functional behavior, psychology, hearing and vision?
2. Would the student benefit from additional academic support and/or modified education (e.g., copies of notes, extra time, reduced workload, simplified instructions, alternative formats for presentation of material, 504/IEP)?
3. Does the student need additional adult support to access the academic curriculum in the least restrictive environment?
4. Does the classroom environment support the student's needs and/or equipment (e.g., desk/seating options, maneuverability space, electrical outlets, flash pass for bathroom or nurse)?
5. Will staff receive education/training to implement the student-specific emergency plan?

Resources

Children's Minnesota: Care at Home- Tracheostomy
childrensmn.org/references/pfs/homecare/tracheostomy-a-guide-for-care-at-home.pdf



For more information, please scan the QR code or visit: KennedyKrieger.org/SHNIC

