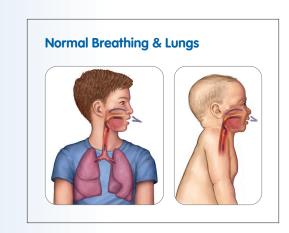


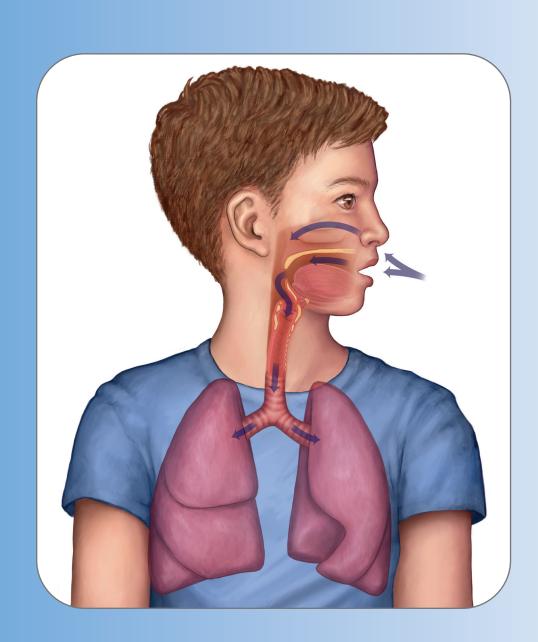
TRACHEOSTOMY EDUCATION

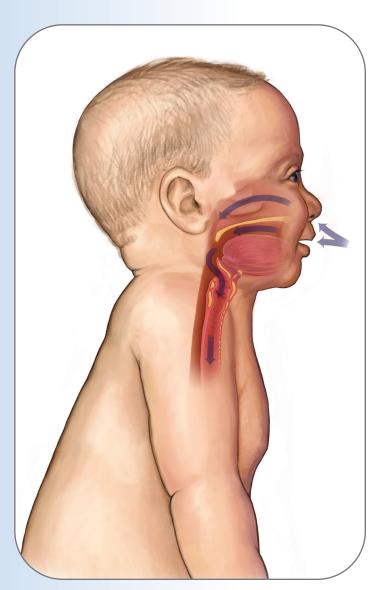


- We breathe through our nose and mouth into our "windpipe" or trachea. The air then goes through the bronchi and into our lungs.
- Our brain sends signals to our lungs to breathe. It also sends messages to cough or gag to keep things out of our lungs.
- Our muscles must be healthy to move our rib cage in and out to breathe.
- Normal breathing requires all of these things working together.



Normal Breathing & Lungs





- Some children have a health condition that makes it hard to breathe through their nose or mouth.
- Some health conditions can affect a child's ability to start their own breath or take a breath big enough to fill their lungs.
- When this happens, surgeons may perform a procedure called a tracheotomy or "trach." This procedure allows the child to breathe through a trach tube placed in their neck.
- Tracheostomy tubes are kept only as long as they are needed. Sometimes they are needed for life.
- A tracheostomy can make it easier to breathe, grow, develop, move around, and play. A child with a tracheostomy can be discharged home even if they need a ventilator to breathe.

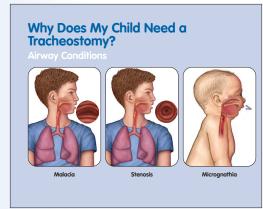




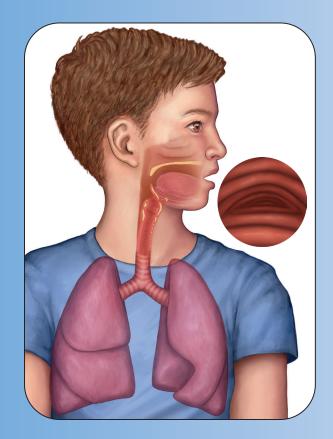
- Airway conditions that can block air from flowing through the nose, mouth and voice box into the lungs are:
 - Small mouth and/or jaw
 - Large tongue
 - Floppy airways above the vocal cords, known as laryngomalacia.
 - Vocal cord weakness or paralysis
 - Narrowing below the vocal cords, known as subglottic stenosis
 - Narrowing of the airway, known as tracheal stenosis
 - Floppiness below the vocal cords such as tracheomalacia, bronchomalacia or tracheobronchomalacia.

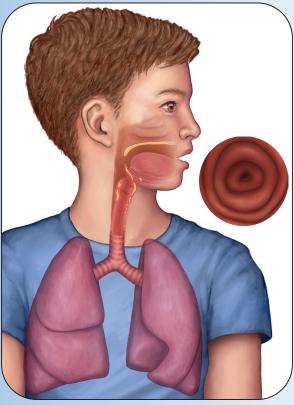
 A tracheostomy allows children to breathe below upper airway blockages directly into the lungs.

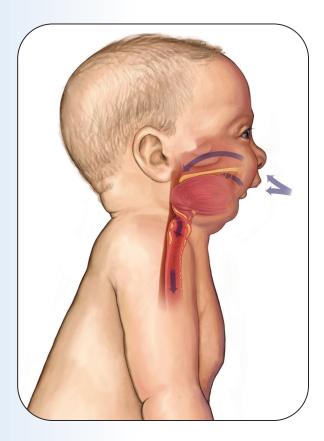
 Sometimes a ventilator is needed to push air through the trachea, bronchi and into the lungs.



Airway Conditions





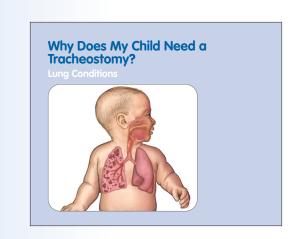


Malacia

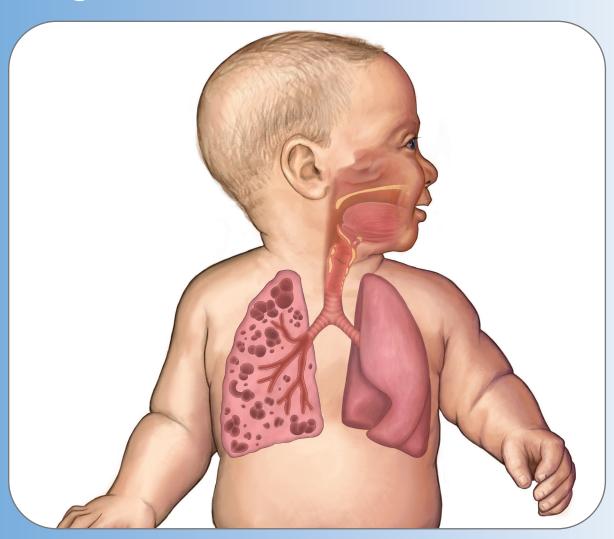
Stenosis

Micrognathia

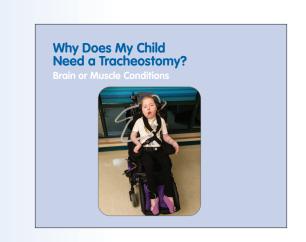
- Some children have problems with their lungs. They may need to be on a ventilator.
- Chronic Lung Disease (CLD) or Bronchopulmonary Dysplasia (BPD) causes the lungs to be stiff. This prevents oxygen from moving in and out of the lungs as easily as it does in healthy lungs. This condition is common in premature babies and/or those that need to have a breathing tube for a long time.
- There are other health conditions that don't allow the lungs to develop, grow, or work normally.



Lung Conditions



- The nervous system includes the brain, spinal cord, and nerves.
 The nervous system and muscles help us breathe. Some nervous system and muscle problems can make it harder to breathe. These may include:
 - Genetic conditions that change the way the brain or muscles work.
 - Brain injury at birth, from trauma, or after a cardiac arrest.
 - Spinal cord injury from trauma or infection.
 - Muscle weakness following a long illness or from medical conditions like muscular dystrophy and cerebral palsy.



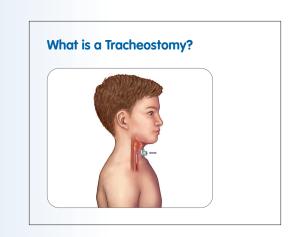
Brain or Muscle Conditions



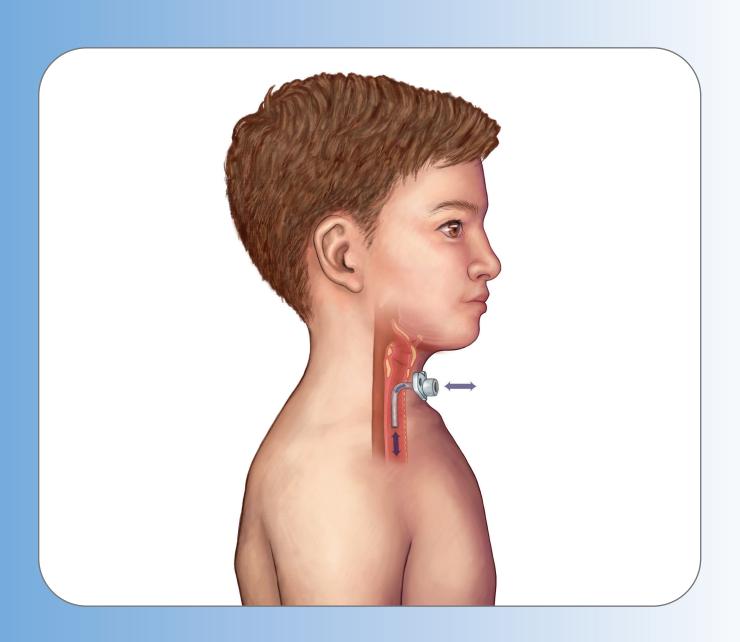
What is a Tracheostomy (Trach)?

What is a Tracheostomy (Trach)?

- A tracheostomy is a surgical opening created under sedation in the Operating Room (OR). This opening is made through the neck into the trachea (windpipe).
- A tracheostomy tube is placed through this opening (stoma) to make a stable airway to breathe.
- Now breathing is done through the tracheostomy tube rather than through the nose and mouth. The tube sits below the vocal cords. You may not hear talking or crying after placement.
- Sometimes the tracheostomy tube is attached to a ventilator to help with breathing.



What is a Tracheostomy?



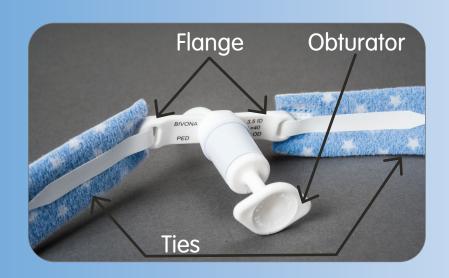
Tracheostomy Tube Features

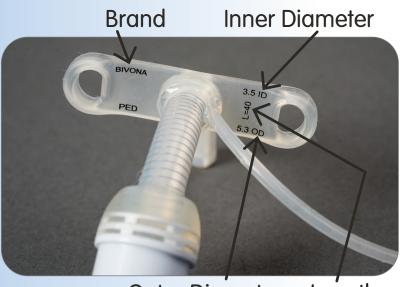
Tracheostomy Tube Features

- Tube: The part of the trach tube which the child breathes through. The tube
 is placed through the stoma and into the trachea.
- Hub: The part of the tracheostomy tube that sits outside of the neck. The hub is used to suction the tube and to connect devices.
- Flexible Extension or Flextend: A part of some tubes used to extend the hub away from the neck to prevent it from rubbing the chin or chest.
- Brand: The type of trach tube. Common brands include Bivona and Shiley.
- Inner Diameter (ID): The diameter of the inside of the tube. Can also be "the size" of the tube.
- Outer Diameter (OD): The diameter of the outside of the tube which fits into the stoma.
- Length: How long the trach tube is.
- Flange: Where the ties attach to the tube. The brand, ID, OD and length are written here.
- Ties: Attach to the flange holes and go around the back of the neck.
 Securely holds the trach tube in the stoma.
- Trach Key or Wedge: Used to disconnect the trach from the ventilator or other device.
- Obturator: Used when putting the trach tube in.
- Cuff: A part of some trach tubes that, when inflated, prevents air from going around the trach tube during breathing. May be needed for children who use a ventilator.
 - Pilot Balloon: Used to inflate the cuff.



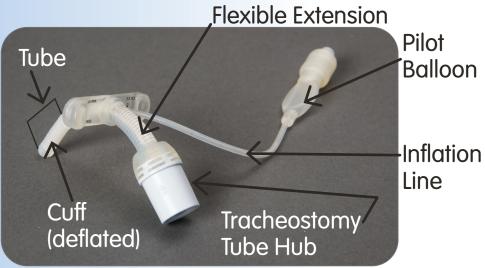
Tracheostomy Tube





Outer Diameter Length





Balloon

- Dual Cannula Trach Tubes:
 - Some trachs have an inner cannula.
 - The inner cannula sits inside the outer cannula and is removed and cleaned daily.
 - The outer cannula can stay in place while the inner cannula is cleaned. At Children's Mercy, the outer cannula is changed and cleaned once a month.



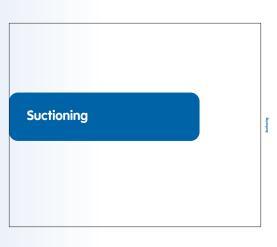
Dual Cannula Tracheostomy Tube



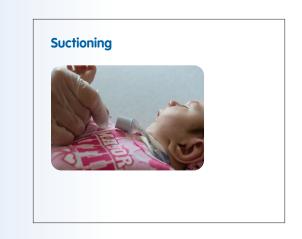




Obturator



- Because a child breaths differently with a trach, they will need suctioning to help get rid of mucous and secretions.
- When a child first gets a tracheostomy, they may need suctioning often. After a child becomes comfortable with their tracheostomy, suctioning will not be needed as often.
- Over time you will get used to suctioning.
- Older children should be encouraged to cough to clear secretions from the trach without suctioning. Wipe the secretions from the surface of the trach and neck with a tissue. Coughing can help minimize suctioning so praise the child for an effective cough.

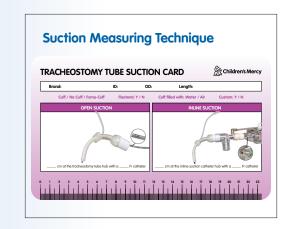




- Some signs the child might need to be suctioned are difficulty breathing, secretions you can see or hear and monitor alarms.
- It is important to keep the airway clean and free of secretions. The tube can plug off if full of secretions, preventing the child from breathing.
- Pay close attention to the odor and color of secretions.
 Cloudy, white and off-white are usually normal. If the secretions are foul smelling or thick yellow-green, call your child's doctor.
- Streaks of blood in secretions may mean the airway is dry.
 This can be treated by using the humidified mask more often or putting a few drops of saline into the trach tube before suctioning. If this happens frequently or becomes worse, notify your doctor.
- By suctioning effectively, you will decrease the chance of respiratory tract infections, such as pneumonia.



- It is important to know how deep to suction the trach tube.
 This will prevent injury of the airway.
- Measuring Technique:
 - Inline: Insert a clean suction catheter through a spare trach tube so the tip of the catheter shows just past the tip of the tube. Document the closest number or color at the end of the trach hub (see picture).
 - Open: Insert a clean suction catheter through a spare trach tube so the tip of the catheter shows just past the tip of the tube and document the number or half number at the end of the trach hub. (see picture)
- Measure the suction depth with the all spare trachs.



Suction Measuring Technique

TRACHEOSTOMY TUBE SUCTION CARD

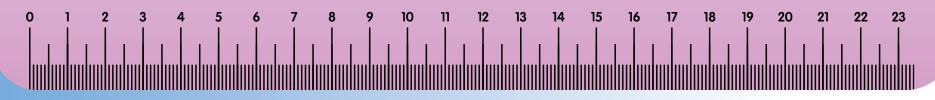


Brand: ID: OD: Length:

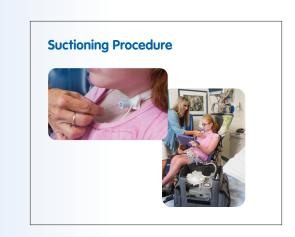
Cuff / No Cuff / Fome-Cuff Flextend: Y / N Cuff filled with: Water / Air Custom: Y / N

OPEN SUCTION ____ cm at the tracheostomy tube hub with a ____ Fr catheter





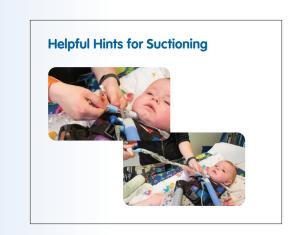
- Equipment:
 - Inline suction or open suction catheter
 - Suction machine and tubing
- Wash hands or put on gloves.
- Do not touch the tip of the catheter that goes into the trach.
- With the suction machine on, the suction catheter connected to the suction tubing, and your thumb off of the suction port, insert the catheter into the hub to the premeasured suction depth.
- Place your thumb over the open suction port or squeeze the inline suction port and slowly remove the catheter in a twisting motion.
 - Do not take longer than 4-6 seconds for each suction pass.



Suctioning Procedure



- Repeat suctioning as needed. Wait at least 30 seconds in between suction passes so that the child can catch their breath.
- If secretions are thick or it is difficult to the pass the suction catheter, place 2-3 drops of saline into the trach tube. This will loosen and thin secretions. Attempt to suction the tube again.
- If you are unable to clear all secretions, try advancing the catheter an extra 1/2 cm.
- If unable to advance a suction catheter, change the tracheostomy tube!



Helpful Hints for Suctioning



Trach Care & Tube Changes

Trach Care & Tube Changes

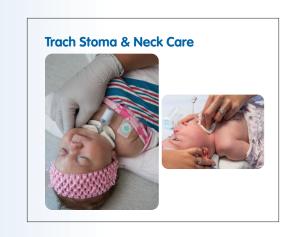
- Trach stoma and neck cares are completed once a day and as needed.
- All trach stoma and neck cares should be done with 2 caregivers who have been trained and are comfortable performing the task.
- 1. Gather your supplies.
 - Soapy, wet, and dry cleaning cloths or swabs.
 - Trach "pants" or stoma dressing, when needed.
 - Clean trach ties.
- 2. Wash your hands.
- 3. Swaddle or secure your child's arms if needed and position their neck so the stoma is easily viewed. A shoulder roll can be used to help extend the neck.



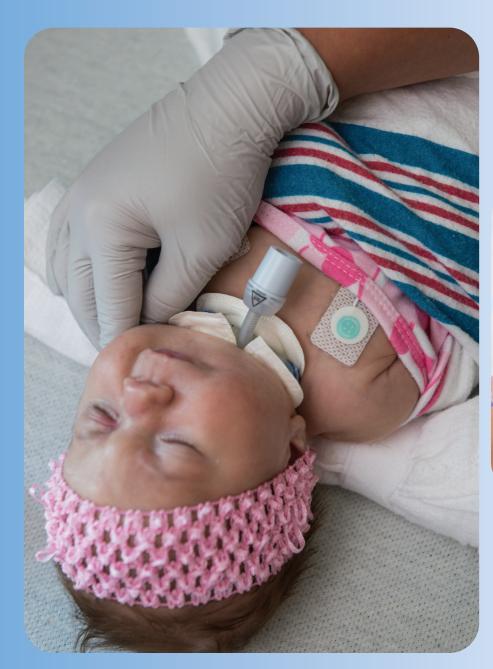
Trach Stoma & Neck Care



- 4. Untile trach ties. Remove trach ties and stoma dressing.
- 5. Clean and dry your child's stoma and neck around the stoma with cotton swabs.
- 6. Attach clean trach ties.
- 7. Apply clean stoma dressing.
- 8. Clean and dry your child's neck.
- 9. Fasten the trach ties so that one small finger fits between the ties and your child's neck.



Trach Stoma & Neck Care





- Change the Tracheostomy tube once a week and as needed.
- If possible, avoid changing the trach tube for 1 hour after feeding to prevent vomiting and possible aspiration.
- All trach changes should be done with 2 caregivers who have been trained and are comfortable performing this task.
- 1. Gather your supplies.
 - Trach tube of the same size as your child's with clean trach ties attached and obturator in place.
 - Your child's smaller size trach tube with clean trach ties attached and obturator in place (used as backup in case you can't insert the original size).
 - Water-based lubricant.
 - Soapy, wet, and dry cleaning cloths or swabs.
 - Trach "pants" or stoma dressing, when needed.
- 2. Wash your hands.
- 3. Swaddle or secure your child's arms if needed and position their neck so the stoma is easily viewed. A shoulder roll can be used to help extend the neck.



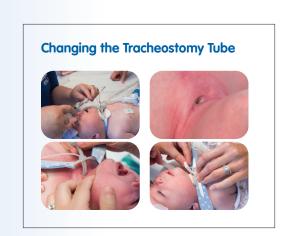
Changing the Trach Tube







- 4. If your child's trach has a cuff, deflate the cuff.
- 5. Release the trach ties and remove your child's trach tube from the neck.
- 6. Quickly clean and dry your child's stoma as tolerated.
- 7. Point down, insert a clean lubricated trach tube with obturator in place into the stoma. Remove the obturator when the flange is flush with the neck.
- 8. If your child is on the ventilator, reconnect.
- 9. Put on "trach pants" or stoma dressing, if needed.
- 10. Clean and dry your child's neck.
- 11. Fasten the trach ties so that one small finger fits between the ties and your child's neck.
- 12. If your child's trach has a cuff that was inflated, reinflate the cuff.



Changing the Tracheostomy Tube





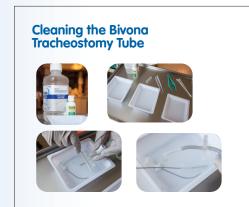




- When in the hospital, tracheostomy tubes, cleaning kits and additional pipe cleaners can be ordered from Distribution.
 When at home, cleaning kits are provided by your Durable Medical Equipment (DME) company.
- Clean with sterile, distilled or tap water that has first been boiled and cooled prior to use.
- 1. Remove soiled ties from the dirty tracheostomy tube and discard. You can wash and reuse at home.
- 2. Fill one basin with water mixed with mild soap (dye and perfume free).
- 3. Place the dirty trach tube and obturator into the soapy water and soak for 60 minutes.
- 4. Scrub trach tube and obturator with cleaning kit brush.
 Run a pipe cleaner through the center of tube.

Be sure to remove all secretions and debris.

 If the tube has a cuff, make sure that it is cleaned with the cuff deflated.



Cleaning the Bivona Tracheostomy Tube









- 5. Rinse the trach tube and obturator in a basin of water.
- 6. Place the trach tube and obturator in container of water that has been brought to boiling and removed from heat (or use water from the Insta Hot® tap). Cover container and allow to sit for 20 minutes.
- 7. Remove the trach tube and obturator from the water. Run a dry pipe cleaner through the tube to dry the center. Allow the rest of the tube to air dry.
- 8. If the tube has a cuff, inflate the cuff to check its integrity. If there is a leak, discard the tube.
- 9. Attach new trach ties to the clean tube.
- 10. Place clean trach tube with attached ties, obturator, lubricant (recommended), and stoma dressing (optional) into clean container. Mark container clearly with size and specifics of the tube. Put at patient's beside where it can easily be located in an emergency.



Cleaning the Bivona Tracheostomy Tube







- When in the hospital, tracheostomy tubes, cleaning kits and additional pipe cleaners can be ordered from Distribution.
 When at home, cleaning kits are provided by your DME (Durable Medical Equipment) company.
- All water should be sterile, distilled, or tap water that has been boiled and cooled prior to use.
- 1. Remove trach ties from the dirty trach tube.
- 2. Fill one basin with water mixed with mild soap (non-colored, non-scented).
- 3. Place the dirty tube and obturator separately into the basin containing soapy solution. Allow to soak for at least 5-10 minutes.



Cleaning the Shiley Tracheostomy Tube

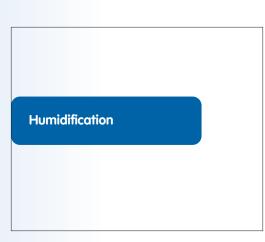


- 4. Scrub the trach tube and obturator with cleaning kit brush. Run a pipe cleaner through the center of tube. Be sure to remove all secretions and debris. If the tube has a cuff, make sure that it is cleaned with the cuff deflated.
- 5. Rinse the trach tube and obturator in a basin of water.
- 6. Remove the trach tube and obturator from the water. Run a dry pipe cleaner through the tube to dry the center. Allow the rest of the tube to air dry.
- 7. If the tube has a cuff, inflate the cuff to check its integrity. If there is a leak, discard the tube.
- 8. Attach new trach ties to the clean tube.
- 9. Place clean trach tube with attached ties, obturator, lubricant (recommended), and stoma dressing (optional) into clean container. Mark container clearly with size and specifics of the tube. Put at patient's beside where it can easily be located in an emergency.



Cleaning the Shiley Tracheostomy Tube





Humidification

- Normally humidification (moisture) is provided by the nose and mouth. When breathing through the tracheostomy tube, we "skip" the nose and mouth.
- Moisture must be added to prevent dryness.
- A Heat & Moisture Exchanger (HME) can be worn directly attached to the trach or inline with the ventilator to provide humidification.
- Oxygen can be added as needed through an HME with a oxygen port.
- Change the HME as needed when soiled or wet.
- It is best not to wear the HME while asleep, unless approved by your child's physician.



Humidification (HME)



- A trach mask and all-purpose nebulizer (AP Neb) is another way to provide humidification; depending on your child's needs, heat may or may not be used.
- Instructions for use/care of your humidification system will be provided by your DME company.
- Oxygen can be added as needed.
- If the child is discharged home on a humidified mask or nebulized treatments, you could have the following equipment delivered to your home in addition to your oxygen system:
 - Air compressor
 - All-purpose nebulizer (AP Neb) and supplies



Humidification (Trach Mask)





Equipment for Home

Equipment for Home

*Your tracheostomy emergency bag will travel with your child at ALL times!

- Always travel with your tracheostomy emergency bag, oxygen, suction machine and monitors.
- Verify contents of your tracheostomy emergency bag before leaving, even on short trips.

Supplies provided by Children's Mercy (for initial bag):

Orange Pouch:

- 4x4 gauze pads
- Non scented/colored soap
- Scissors
- Wire cutters, when needed

Yellow Pouch:

- Suction catheters (4)
- Saline bullets (10)

Inside Bag:

- Shoulder roll
- Swaddle blanket, when needed

- Tracheostomy tubes
 - One the same size as the child's current tube with obturator and ties in place
 - One smaller size with obturator and ties in place
 - ♦ Water-based lubricant
 - Stoma dressing, when needed
 - Syringe to inflate and deflate cuff, when needed
- Distilled water
- Gloves

Supplies Provided by your DME Company:

- HME's
- Resuscitation bag and mask

Additional Supplies to Consider:

Hand sanitizer

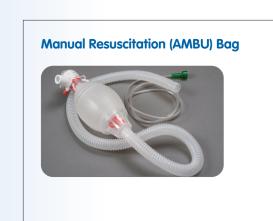


Tracheostomy Emergency Bag





- The resuscitation bag is used to:
 - Administer inhaled medications
 - Assist your child to breathe
 - Manually ventilate your child
- If your child requires oxygen, connect the resuscitation bag to the oxygen source. If oxygen is not available, you can manually ventilate with room air.
- To use the resuscitation bag:
 - Connect the bag to the trach tube hub. If your child is on a ventilator, disconnect the ventilator first.
 - Squeeze the resuscitation bag with slow and steady pressure over about 1 second, watching for chest rise.
 - Give your child a breath every 3-5 seconds.
- If your child is breathing on their own, give assisted breathes when they breathe in.



Manual Resuscitation (AMBU) Bag

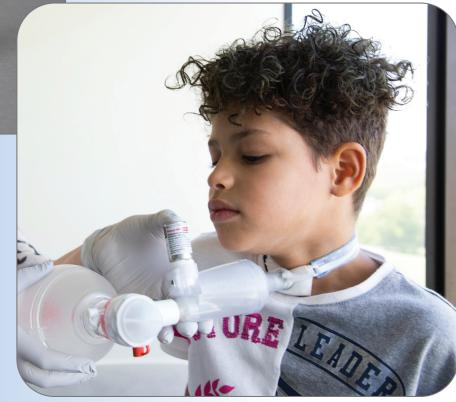


- Your doctor may ask you to give your child inhaled medicine to help them breathe.
- You can give these medicines through the tracheostomy tube with an MDI or an aerosol nebulizer.
- An MDI (Metered Dose Inhaler) is given through the ventilator, with a resuscitation bag, or with a special spacer.
 - You will learn how to give an MDI treatment before you go home.
- An aerosol nebulizer can be given through the ventilator or a trach mask with a special machine.
 - If ordered by your child's doctor, your DME company will teach you how to use this equipment.



Inhaled Medications



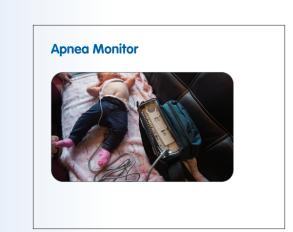


- A suction machine is used to remove secretions from the airway.
- Always take your suction machine with you when traveling.
- The suction machine battery should be plugged in to charge when not being used.
- Anyone providing trach care should learn how to use the suction machine.
- The DME company will train you on how to use this machine.

Suction Machine



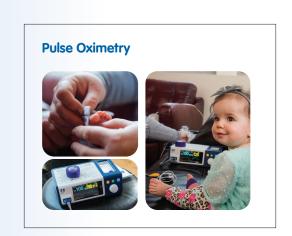
- An apnea monitor is a machine that detects your baby's breathing (chest movement) and heart rate.
- If your baby's heart rate slows down (bradycardia) or the chest stops moving (apnea), the monitor will sound to alert you to check on your baby.
- When you hear the monitor alarm, you must check on the baby right away—every time.



Apnea Monitor



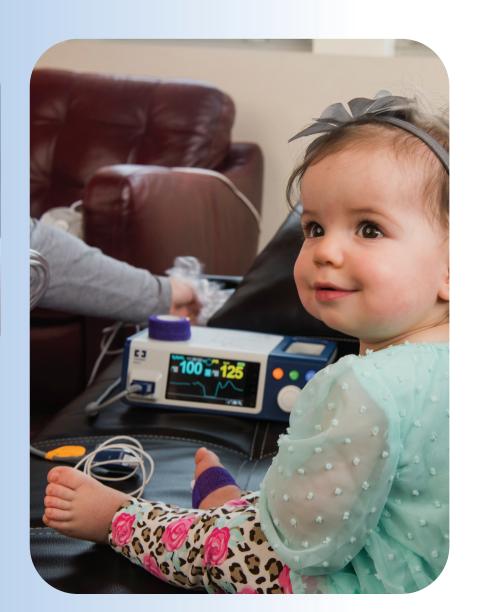
- A pulse oximeter is a monitoring device that measures heart rate and the amount of oxygen in the blood.
- It is often worn on a finger, toe or around the foot. A wire leading to a monitor shows the readings and sounds an alarm if they are not normal.
- All caregivers need to know what is normal for the child. It is important to know how to recognize a false alarm, which may happen if the device isn't properly attached or the child is moving.
- To use, clean the finger or foot in which the probe will be placed. Place the probe light side down onto the finger or foot. You can wrap with a cloth strap, place a sock over the foot to keep it in place, if needed.
- Your DME company will train you on how to use this machine.



Pulse Oximetry







- Your child may need more oxygen than is in the air. This is called supplemental oxygen.
- Supplemental oxygen can be given through an HME, trach mask, or the ventilator.
- Portable smaller units called "E" or "D" tanks are used for transport or when the oxygen concentrator cannot be used.
- Green tanks, usually large tanks or "MM tanks," are delivered to your house.
- Oxygen concentrators: These devices concentrate oxygen from the air and deliver it to your child. This is not portable and requires electricity to work. You will need to use your tanks in case of a power failure.



Oxygen





- Here at Children's Mercy we provide a stroller modified by our carpentry team to fit all of your infant's equipment.
- The photos are an example of how the equipment could be placed on the stroller.



Customized Stroller





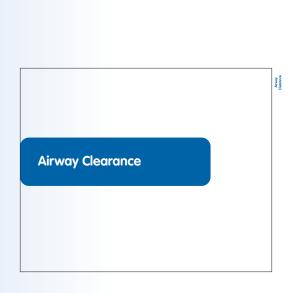
- If your child's health care team determines that your child needs a wheelchair, one will most likely be provided through your insurance company.
- Here is an example of how you could set up your wheelchair to include all of your equipment.



Customized Wheelchair







Airway Clearance

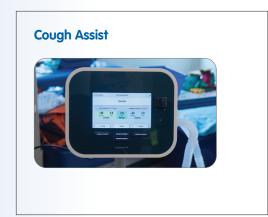
- Percussion or CPT is a tapping technique that loosens secretions. This will help the secretions drain from the lungs into the large airways where it can be removed.
- The percussion technique involves gentle tapping on the chest with cupped hands, manual percussor, or percussion machine.
- An oscillating vest is a machine made up of two pieces.
 - The air-pulse generator sends air through the hoses. The air causes the vest to inflate and deflate rapidly.
 - This rapid inflation and deflation creates pressure on the chest similar to clapping. The vibrations separate mucus from the airway walls and moves it up into the large airways.
 - Sessions last about 20 to 30 minutes.



Percussion or Oscillation Therapy



- Coughing is normal. It is important to be able to have a strong cough. This will help clear secretions.
- The lining of the airways produce small amounts of mucus which trap dirt and bacteria. Coughing is the body's way of removing this mucus from the lungs, reducing the risk of infection.
- Cough Assist helps to make your child's cough stronger and more effective.
 - First the machine delivers a large volume of air when you breathe in (positive pressure).
 - The lungs will expand, similar to a normal deep breath.
 - The machine will then quickly reverse the flow of air to push secretions out (negative pressure).



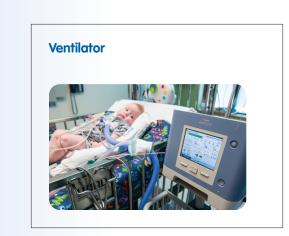
Cough Assist



Home Ventilator

Home Ventilator

- The ventilator, or breathing machine, attaches to the tracheostomy tube and provides continuous breathing support for your child.
- The doctor will decide the settings for the ventilator. Settings include:
 - Breathing rate
 - Size of breath
 - Amount of oxygen
- All caregivers need to know the settings.



Ventilator



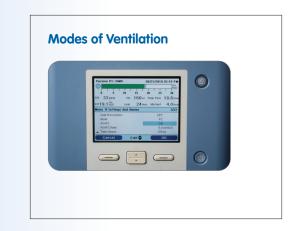
- Ventilator: the machine that helps your child breathe.
- Circuit: tubing that delivers the breaths to the child.
- Filter: keeps the ventilator clean and dry.
- Heater: will heat up the air delivered to your child.
- Heater wires: will measure the heat delivered to your child and ensure the air is not too hot or cold.
- Disposable Exhalation Port (DEP)/Whisper Swivel: your child will exhale or "breathe out" here.



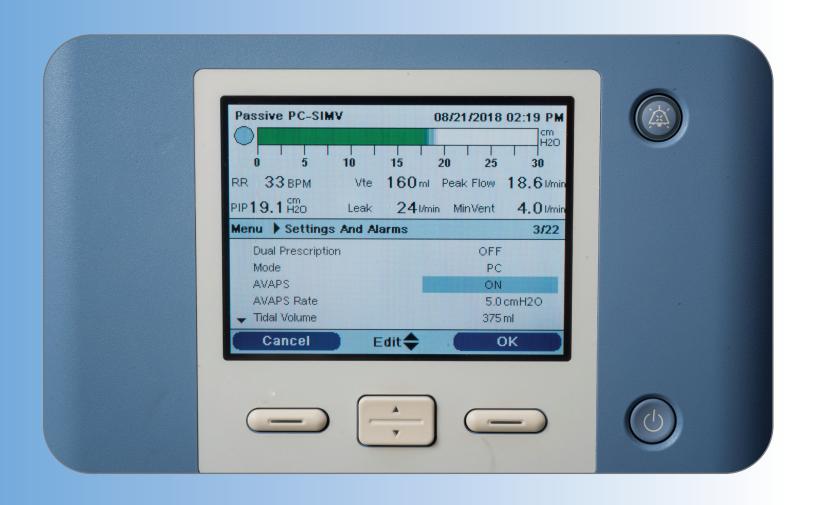
Parts of the Ventilator



- Continuous Positive Airway Pressure (CPAP): a continuous stream of air or "pressure" to help keep the airways open.
- Pressure Control (PC): the ventilator delivers a breath with a set pressure.
- Volume Control (VC): the ventilator delivers a set volume of air.
- Synchronized Intermittent Mechanical Ventilation (SIMV): the ventilator will deliver breaths both at set times and when your child starts a breath.
- Average Volume Assured Pressure Support (AVAPS): provides pressure support to achieve a set tidal volume with each breath.



Modes of Ventilation



- Tidal volume (Vt/Vte): the volume of air inhaled or exhaled on each breath.
- Rate (RR): how many times per minute the ventilator gives a breath.
- Positive End Expiratory Pressure/Expiratory Positive Airway Pressure (PEEP/EPAP): the pressure left in the lungs at the end of a breath.
- Pressure support: a set pressure given above PEEP to assist with a breath.
- Inspiratory time: the amount of time given for your child to inhale.



Ventilator Settings



Troubleshooting

Troubleshooting

- Fast, noisy, or increased work of breathing
- Restlessness
- Frightened look
- Pale and sweaty skin
- Retractions (the skin on the chest and neck are pulling in with breathing)
- Cyanosis (blue color around nose, mouth and fingertips)
- Monitor alarms for a slowed heart rate (bradycardia), decrease in blood oxygen (desaturation), or loss of normal breathing (apnea).

Signs of Respiratory Distress

Signs of Respiratory Distress

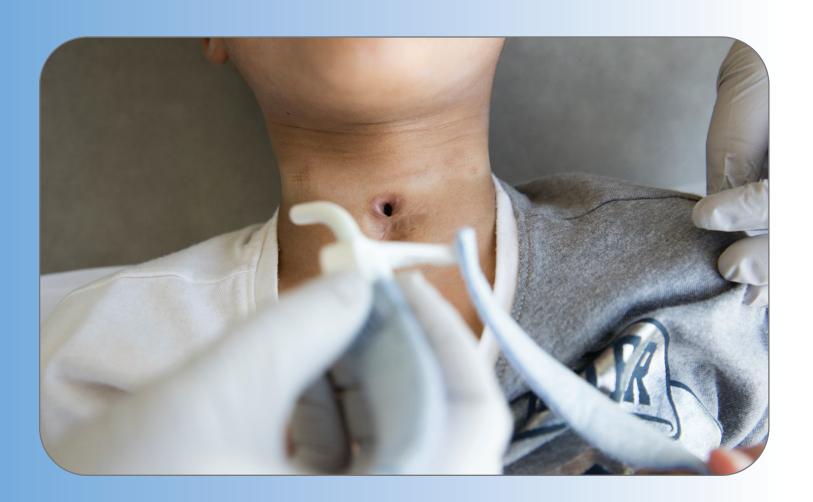


- Take a breath and do not panic. The stoma will not close immediately but will start to close over time without a trach tube in place.
- Reinsert the displaced trach tube. Use the obturator to help with placement if it is available. A clean trach tube change can be done later when breathing has returned to normal.
- If unable to reinsert the displaced trach tube, use your spare tracheostomy tube that is clean and has the obturator in place.

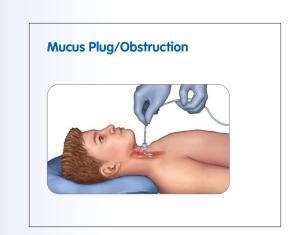


Decannulation

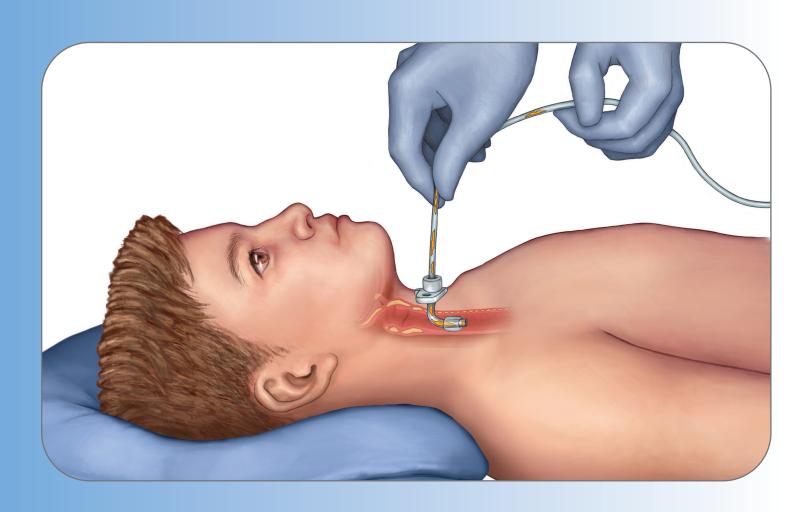
Trach is Out of Place



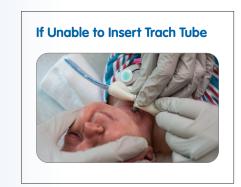
- Mucous can build up in the tube and block the flow of air.
- If you are unable to insert a suction catheter into the trach tube, change the trach tube.
- If you are able to insert the suction catheter but it is difficult or the secretions are thick, place 2-3 drops of saline in the trach tube and attempt suction again.
- If possible, use open suction and remove mucous by twisting the catheter in a circular motion as you withdraw it from the trach tube. For patients on a ventilator, only do as tolerated.
- If you think the tube is filled with secretions....change it immediately
- When in doubt, change it out!



Mucus Plug/Obstruction



- Take a breath and do no panic. The stoma will not close immediately but will start to close over time without a trach tube in place.
- Reposition head and neck. Make sure the neck is extended and you are able to visualize the stoma. Use a shoulder roll.
- Make sure the obturator is in place and the trach tube tip is being inserted downward into the stoma.
- You may need to have one person stretch the skin around the stoma with their fingers to help open the stoma and make it more visible while another person places the trach tube.
- If unable to insert tube after repositioning, insert the tracheostomy tube that is smaller.
 - With smaller tube safely in place, call your ENT team. Your child will need to be seen within 24 hours.
- If unable to insert smaller tracheostomy tube, cover stoma and assist the child with breathing. Cover the stoma and provide breaths through the nose and mouth. This can be done with a face mask and resuscitation bag. Call 911.



If Unable to Insert Trach Tube



- Avoid strong smells, smoke, dust, powders and aerosol sprays.
- Avoid fuzzy blankets, toys, or clothing with loose fibers that could be breathed into the trach tube.
- Prevent water from getting in the trach while bathing and when around bodies of water. No swimming.
- Avoid toys containing small parts such as beads and Legos that could be put into the trach tube.
- Your child should always be accompanied by a trained caregiver.

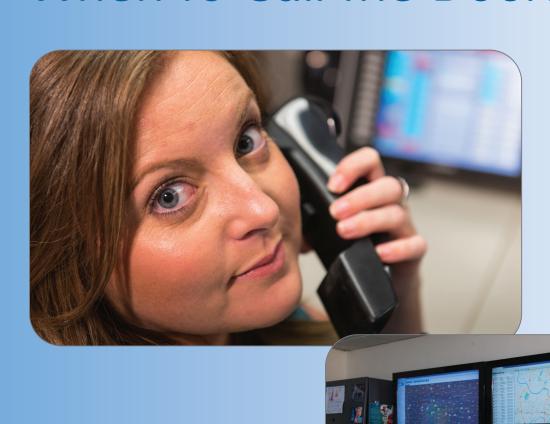




- Difficulty breathing or increased oxygen requirement.
- Change in the amount, color or smell of secretions.
- Blood-tinged or thick secretions that have not resolved with increasing humidified mask use or use of saline into the trach tube before suctioning.
- Redness around the stoma or skin on the neck.
- Frequent tube dislodgement.
- Frequent monitor alarms.



When to Call the Doctor



- Granulation tissue is extra tissue around the trach stoma which can cause bleeding, drainage, and/or difficulty with trach changes.
- It is common in trach patients and can be caused by tube friction, moisture and/or infection.
- Can be treated with steroid creams, silver nitrate and sometimes surgical stoma revision if needed.
- If you notice difficulty with a trach tube change, notify your doctor.



Granulation Tissue



Communication

Communication

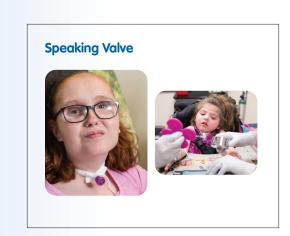
- Speech therapy can help you learn age appropriate ways to communicate with your child.
- Communication allows children to have a sense of control.
- Therapy can also help improve and build oral-motor skills.



Speech Therapy



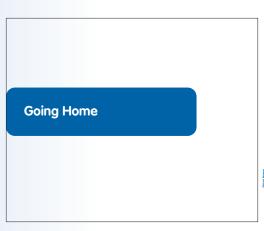
- Having a tracheostomy can make it hard to talk.
- Now breathing is done through the tracheostomy tube rather than through the nose and mouth. Because the tube is below the vocal cords, air will not pass through the vocal cords making sounds like talking or crying.
- A speaking valve may be used with a physician's approval.
- The valve allows your child to breathe in through the tracheostomy tube and out through the nose and mouth. Air will then pass through the vocal cords.



Speaking Valve







Going Home

- Before you are discharged home from the hospital after trach placement you will complete a parent care stay or PCU.
- Two caregivers will need to stay in the hospital room for 48 hours and independently provide all trach care and home care needs.
- One caregiver must be awake at all times.
- You will use your home equipment and monitors.
- You will be responsible for all cares and troubleshooting.
- The medical team will still be available for assistance if needed.

Parent Care Status (PCU) Stay



Parent Care Status (PCU) Stay



- One trained caregiver will need to directly monitor the child at all times.
- You will need a second person to drive the car.
- When driving make sure that you know the nearest mile markers or street names in case of an emergency.
- All equipment that can not be secured with a seatbelt, should be on the floorboard. You can pad the equipment with pillows if you would like. Make sure that you can still read the monitors and access emergency equipment.



Riding in the Car







 Children less than 2 years of age with a trach and/or vent will be followed by the Infant Home Ventilator Clinic. This is a multidisciplinary clinic that also provides primary care.



Infant Tracheostomy Care and Home Ventilator Program



 Children 2 years of age and older with a trach and/or vent will be followed by the Pediatric Tracheostomy and Home Ventilation Clinic. This multidisciplinary clinic does not provide primary care.

Pediatric Tracheostomy and Home Ventilation Clinic



Pediatric Tracheostomy and Home Ventilation Clinic



Resources

- Mitchell, Ron B. et al. Clinical Consensus Statement: Tracheostomy Care. American Academy of Otolaryngology-Head and Neck Surgery Foundation. 2013. 148(I) 6-20.
- Sterni, Laura M. An Official American Thoracic Society Clinical Practice Guideline: Pediatric Chronic Home Invasive Ventilation. American Journal of Respiratory Critical Care Medicine. 2016. April 15; 193(8): e16-e35.