Tracheostomy Care

This book is provided to help you better manage the care of your child with a tracheostomy.
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General Information

Medical reason for tracheostomy tube______________________________________________
_____________________________________________________________________________
_____________________________________________________________________________

Parents/primary caregivers_______________________________________________________

Providers:
Pediatrician/family doctor________________________________ Phone__________________
Ear, nose, throat (ENT)__________________________________ Phone__________________
Pulmonologist_________________________________________ Phone__________________
Other________________________________________________ Phone__________________

Home medical supply company__________________________________________________
Contact person_________________________________________ Phone__________________

Home nursing company ________________________________________________________
Contact person_________________________________________ Phone__________________

Pharmacy_____________________________________________ Phone__________________
Electric company______________________________________ Phone__________________
Telephone company____________________________________ Phone__________________

Emergency Department: _____________

My child’s trach is made by________________________________ Size__________________
The suction catheters are size_______________________________ Suction depth__________
Suction machine pressure________________________________________________________
My child’s trach should be changed every___________ days. Due on____________________
My child uses_________________________________________________ for trach ties/holder

Other health information:
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________

Oxygen needs/equipment:
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________

Ventilator brand_______________________ Settings______________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
Introduction

This book has been given to you to help you learn how to care for your child’s tracheostomy. It will be used throughout your hospital stay to provide instructions on the basic care of a tracheostomy tube and will be yours to keep at home as a reference guide.

This book gives the basic instructions for many parts of tracheostomy care such as suctioning, trach tie change, trach tube change and general safety guidelines. This book is only a guide, if your doctor’s instructions are different than what is printed in this book, follow your doctor’s instructions.

The hospital staff are here to help you learn to care for your child. There will need to be two adults trained in your child’s care before being discharged to home. Teaching will begin before your child’s surgery and will continue every day until you are able to do the care alone. If you have special learning needs such as trouble reading or need an interpreter please let us know, we want to help you and your child. Feel free to ask questions and help the nurses with as much of the care as possible.

When you are comfortable with the care of your child’s tracheostomy tube, you will be ready to go home. Before you go home you will need to stay overnight and provide all the care to your child. This will give you a chance to be independent with the back-up of nurses if needed.

Many children live at home with tracheostomies. With the help of the hospital staff and this book, you will be able to take your child home feeling safe and confident.
What is a Tracheostomy?

A tracheostomy is a tube placed in the neck to help your child breathe.

A tracheotomy is an operation when the doctor makes an opening in the front of the child’s neck into the windpipe (trachea). The doctor then places a smooth curved tube into the opening. Your child will now breathe through the trach tube instead of the mouth and nose.

After the operation, your child may have stitches in the neck to keep the new trach tube in place. There may also be some stitches called stay sutures. The sutures are long strings that are taped to the child’s chest, which will be used to open the hole in the neck if the trach tube accidentally comes out before the hole is healed.

Your child may need to be on the ventilator (breathing machine) for a while after the operation. The nurses will give your child pain medicine to help any discomfort they might have.

Trach tubes are made of three different kinds of material. Your child’s doctor will decide which kind of tube your child will need.

The four kinds are:

- Metal
- Polyvinylchloride (PVC): Example Shiley®
- Silicone: Example Bivona®
- Polyurethane

Some trach tubes have a cuff that completely seals the windpipe so that all the air goes in and out through the trach tube. Your child may have this kind if they are on a ventilator or are an older school age child. Please see the cuffed trach section of this manual for instructions on the care of a cuffed trach tube.

Trach tubes also come in single or double cannula. Infants or small children always have a single cannula. Older children may have the double cannula. Please see the inner cannula section of this manual for specific instructions.
What is a Tracheostomy?

Parts of the trach tube:

- Obturator: Used to guide the tube into the opening when changing the trach tube.
- Flange/neck plate: “Wings” on the trach tube that the ties are secured to. The flange will have the brand and size of trach tube printed on it.
- Cannula: Part of the trach tube that is inside the windpipe.
- Inner cannula: Part that is inside the cannula of a double cannula trach. The inner cannula may be removed for cleaning.

Cuffed Trach

![Cuffed Trach Diagram]

Uncuffed Trach

![Uncuffed Trach Diagram]
How the Body Breathes

People breathe by moving air in and out of the lungs. The body uses the oxygen in the air to provide energy to the organs and tissues. The oxygen is brought to the body when breathing in. When we breathe out, a gas called carbon dioxide is removed from the body.

To breathe in, a large muscle in the chest called the diaphragm moves down and the rib cage expands, which causes a slight vacuum effect. This vacuum lets the air come into the body because of the change in pressure. The air comes into the nose where it is warmed, filtered and moistened. The air then travels down the windpipe past the voice box. It then goes into the two large main branches of the lungs. These two branches are called the left and right main stem bronchus. These branches lead directly to the lungs. The branches get smaller and smaller as you go down into the lung, much like a tree as it branches outward from its trunk. At the end of the branches are alveoli which are tiny air sacks that let the oxygen into the blood where it can be used as energy.

When a child has a tracheostomy, the natural warming, filtering and moisturizing of the air does not happen because air goes directly into the windpipe and lungs and not through the nose first. Speech can also be changed because of the changes in the air through the vocal cords. The other sections of this book will give more information on how the air is warmed, filtered and moisturized with a tracheostomy tube in place. There is also a section about speech with a tracheostomy tube.
There are many reasons that a child may need to have a tracheostomy tube placed to help them breathe easier. Some of the common reasons are listed below. Your child’s doctors and healthcare team will decide if and when your child will have surgery for a tracheostomy. The tracheostomy tube may stay in place permanently or only for a short time depending on your child’s needs.

Common reasons a trach may be needed:
- Subglottic stenosis
- Tracheomalacia
- Vocal cord paralysis
- Problems of the airway present at birth (example: Pierre Rubin Syndrome)
- Sleep apnea
- Infections, such as epiglottitis or croup
- Laryngectomy
- Laryngeal, severe neck, face or mouth injuries
- Burns of the airway
- Bronchopulmonary Dysplasia (BPD)
- Chronic (long lasting) lung disease
- Diaphragm problems
- Need for long-term ventilator support
- Aspiration
- Fractured vertebrae or spinal cord injury
- Neuromuscular diseases such as muscular dystrophy that weaken the muscles needed to breathe
- Long-term coma
The following supplies should be kept at the bedside or area the child will be at most of the time. This is in addition to the supplies in the trach “to go” bag.

**Supplies:**
- Extra tracheostomy tube - same size
- Extra tracheostomy tube - one size smaller
- Obturator
- Suction catheters, machine and tubing
- Normal saline (if needed)
- Breathing bag
- Oxygen source (if needed)
- Tracheostomy tube holder (Velcro ties)
- Tracheostomy split gauze (directed by your doctor)
- Tracheostomy cleaning supplies
- Humidification device
- Pulse oximetry (if ordered)
Tracheostomy Skin Care

Tracheostomy skin care is the cleaning of the skin around the trach stoma (opening in the neck). It should be done every morning and evening. The skin may need to be cleaned more often if it becomes moist, infected or red.

**Supplies:**
- Mild soap and water
- Cotton-tipped swabs

**Procedure:**
1. Wash hands.
2. Suction trach before skin care.
3. Lay child flat and place rolled towel or blanket under shoulders to help you see the trach site.
4. Hold trach in place while cleaning the skin.
5. Dip cotton swab in soapy water.
6. Use rolling motion to clean from the skin opening outward.
7. Repeat until all the skin is clean and without drainage. If drainage is dried and crusted, use one half strength hydrogen peroxide before using soap.
8. Dip new swab in plain water and rinse skin.
9. Use a new swab each time—do not put a used swab into the clean water.
10. Allow to air dry or gently pat dry with gauze or towel.
11. Do not place any gauze or material underneath the trach tube unless directed by your doctor.
12. Do not use powder or lotion around the trach opening.
13. Observe skin for redness, drainage or rash. If noted, call your child’s doctor.

**Topical Medications**
Occasionally your child’s doctor may prescribe an ointment or cream to be applied to the skin near the trach opening or under the trach ties. To do this, place a small amount on a cotton swab and rub over the affected area.

**How to Make Half-Strength Hydrogen Peroxide**
Mix four tablespoons of water and four tablespoons of hydrogen peroxide in a clean bowl or container. Throw away what you do not use at the end of the day.
Trach Tie Change

Your child’s tracheostomy tube is held in place by ties. These ties are usually made of cloth with a velcro closure. The ties should be changed by two people. One person holds the trach in place while the other person cleans the skin and changes the ties.

Change tracheostomy ties daily or as directed by your child’s doctor, or when wet or dirty.

**Supplies:**
- Velcro ties unless ordered differently by your doctor
- Wash cloths
- Soap and water to clean the skin

**Procedure:**

1. Wash hands.

2. Measure the new tie by placing the tie around the child’s neck—cut the end off if needed.

3. Place rolled towel or blanket under shoulders to show the neck and trach tube.

4. Restrain the arms and legs of infants and children by wrapping in blanket if needed and lay your child flat.

5. Take off one side of the tie.

6. Clean skin under the tie—wash, rinse and dry.

7. Put new tie on trach tube wing of the same side. Thread the narrow edge through the hole on the trach tube wing and fold back onto the soft cloth of the neck band.
Trach Tie Change

Procedure:

8. Take off the other side of the tie.

9. Clean skin under the tie with soap and water—rinse and dry.

10. Put the new tie on the trach wing of the same side by threading the narrow-edge through the hole as you did on the first side.

11. Secure the two ends of the tie at the back of the neck. If there is too much extra material, you may cut off the extra with scissors.

12. Check to be sure the ties are tight enough, but not too tight. To do this place your little finger under the tie at the side of the neck, it should fit snugly under the tie.
Humidification

Humidity, the moisture that is in the air, will change the secretions or mucus your child makes. Normally, it is the mouth and nose that heat, moisture and filter the air we breathe. The tracheostomy tube bypasses the mouth and nose, so additional moisture and filtering must be given. If your child does not have enough humidity, the secretions will become thick and hard to suction out, which may result in trouble breathing. The amount of fluids your child drinks, the air in your home and the weather outside all change the amount of humidity. There are several ways to increase the amount of humidity.

**Fluid Intake**
It is important that your child drink a lot of fluids. Drinking a lot of liquids will help to keep the mucus thin. It is especially important to be sure your child gets enough liquids when they are sick with any infection, especially vomiting, diarrhea or fever-type illnesses. Check with your child’s doctor if you think they are not getting enough to drink.

**Room/Home Humidifiers**
Heating your home in the winter and air conditioning in the summer can dry out the air. Room humidifiers can be a helpful, but they must be washed, rinsed and refilled every day to prevent bacteria growth.
Humidification Methods

Humidity should be given to your child anytime. Increase humidity if the mucus is thick or bloody. Your doctor and home supply company will decide which method of humidity is best for your child. The following is a list of possibilities.

**Artificial Nose/Heat Moisture Exchanger (HME)**
An artificial nose/HME is a humidifying filter that fits onto the end of the trach tube. This is an option for when your child is awake and active. Attachments are available to allow oxygen to be delivered through this device as well. The artificial nose must be changed daily, or if it becomes wet or dirty. **These devices should only be worn when the child is awake and supervised.**

**Trach Ring**
A trach ring with a water bubbler may be used to give small amounts of humidity with oxygen.
Humidification Methods

Trach Mask
Trach mask gives the most humidity. The mask sits in front of the trach and has a strap that goes around the child’s neck to keep it in place. Moist air travels through the tubing and blows a constant mist. Care must be taken to be sure the child’s skin stays as dry as possible. Your child should be positioned above the water trap that collects the excess moisture. This will prevent water from accidentally spilling into the trach tube. The trach mask limits mobility and is best used during sleep time.

Saline
Saline may be put into the trach tube to help with humidity. One to three drops every few hours is usually enough. These drops may cause your child to cough. Your doctor may also order saline nebulizer treatments. Follow the instructions in this manual for giving nebulizer treatment, but use only a 3ml vial of plain saline without any medicines.
Suctioning

Suctioning your child’s tracheostomy tube is one of the most important things you will learn to do. Suctioning removes secretions or mucus that is normally made by the lungs. Suctioning the mucus will keep the trach tube open and allow your child to breathe easily.

You will need to check your child frequently to see if they need suctioning. Older children may be able to tell you when they need suctioning.

The most common times for suctioning are:
- Before eating
- Before sleeping
- Before changing the trach tube
- When first waking up from sleeping

Your child will need to be suctioned more frequently if they are sick. Do not suction unless your child shows signs that it is needed. Suctioning too often can cause more mucus to be produced or damage to the trachea.

Signs that your child needs to be suctioned:
- Gurgling or bubbling of mucus from trach
- Increased coughing
- Restless or anxious
- Difficulty eating or drinking
- Difficulty breathing—nasal flaring, retractions, breathing faster than usual
- Lips, mouth, fingernails looking pale, gray or purple/blue

What to Watch For
It is normal for your child to cough with suctioning. Allow your child to take a few breaths and calm down between suction catheter passes. If your child is pale, blue or gray, give extra oxygen or breaths with the breathing bag. If your child has a pulse oximeter monitor, watch your child’s oxygen level during suctioning. If the oxygen level is less than 92 percent, you will need to give them extra oxygen or extra breaths using the breathing bag.

Each time you suction your child’s trach, you need to look at the mucus to see what color it is, how thick it is and the amount removed. This information will be important to your child’s doctor if your child becomes sick.

Possible kinds of mucus include:
- Clear or white: This is normal.
- Yellow, green or foul smelling: Infection. You will need to call the doctor and suction more frequently.
- Bloody or blood streaked: Not enough humidity or moisture.
Suctioning

**Supplies:**  
- Suction machine
- Suction catheter
- Water
- Clean plastic bag or container

**Procedure:**

1. Wash your hands.
2. Attach the suction catheter to the suction machine tubing.
3. Turn on the suction machine. Suction pressure should be kept between 80-120 mm Hg.
4. Insert the catheter into the trach tube opening to the pre-measured depth. (See next page for how to measure this distance.)
5. Cover the thumbhole on the suction catheter with your thumb.
6. Pull out the catheter as you roll or twirl the catheter between your thumb and finger. **Limit suction time to 5 seconds.**
7. Rinse the catheter in clean or sterile water. Repeat suctioning if needed.
8. Keep the catheter clean by keeping it in a clean plastic bag or container. Throw it away at the end of the day or if you can’t get it clean with water.

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*a. Insertion of suction catheter to proper depth; suction port remains open*  
*b. Suctioning airway in circular motion as catheter is removed; suction port closed*
Measuring Distance for Suction Depth

Using the proper suction depth will prevent accidental injury to the lung tissue and airway. To measure for the proper depth, hold a suction catheter next to the obturator or place inside an extra trach tube of the current size. Look for the number on the suction catheter. This number is the number of centimeters to insert the suction catheter.

If the suction catheter does not have any numbers on it, use a tape measure to get the number of centimeters. (See picture below.)
There may be times that your child is able to cough the mucus to the top of the tracheostomy tube. When this happens it is all right to use a bulb syringe or a Sims® adapter to suction at the top of the trach tube. You will still need to suction more deeply with a catheter at least one to two times each day.

**Procedure:**

1. Wash your hands.
2. Attach the Sims adapter to the suction tubing.
3. Turn on the suction machine.
4. Place the tip of the Sims adapter to the trach tube opening.
5. Remove from trach tube and rinse with water.
6. **Do not leave the tip near the opening for more than 5 seconds—your child can’t breathe with the tip in the trach opening.**
Bulb Suctioning

Procedure:  
1. Wash your hands.
2. Squeeze the back of the bulb with your thumb to compress the bulb syringe.
3. Place the tip of the bulb in the opening of the trach tube.
4. Slowly release your thumb. This will cause suction and allow the mucus to be suctioned up into the bulb. Remove from opening.
5. Squeeze the back of the bulb to force the mucus out of the bulb and into the tissue.
6. Repeat if mucus is still visible at the top of the trach.
7. Do not hold the bulb in the trach opening for more than 5 seconds—your child can’t breathe with the bulb in place.
8. Let your child to take a few breaths between suction attempts.
9. If your child is having trouble breathing, has purple/blue lips or continues to cough, use a catheter and deep suction immediately.
10. When done suctioning wash the bulb with hot, soapy water and rinse with clean water. Allow to air dry.

If your child continues to have trouble breathing after suctioning, change the trach tube. If they are still having trouble breathing, take your child to the local emergency room or call 911.
Changing the Tracheostomy Tube

Your child’s routine trach tube change will be weekly to monthly, as instructed by your doctor, to prevent mucus build-up, infection and build-up of skin tissue around the trach tube. Sometimes the trach tube will need to be changed before the scheduled time.

These times include:
- Not able to insert a suction catheter.
- Trouble breathing not improved by suctioning the trach tube.
- Trach tube accidentally comes out.
- Noisy breathing that does not go away after suctioning.

Your child’s trach should only be changed by caregivers trained in the procedure. A trach tube change should always be done with two people except in an emergency.

Some children become upset during a trach tube change and may vomit. To decrease the chance of vomiting, your child should have nothing to eat or drink for at least one hour before scheduled trach change.

Supplies:
- New or cleaned trach tube of the same size with obturator in and ties in place
- One trach a size smaller
- Blanket roll to support shoulders
- Blanket to wrap child in
- Saline for lubricant
- Suction machine and suction supplies
- Stoma site care supplies
- Breathing bag with oxygen attached—if available

Continued on next page.
Changing the Tracheostomy Tube

**Procedure:**

1. Gather equipment needed.
2. Explain procedure to child, if appropriate.
3. Wash your hands.
4. Inspect replacement trach tube for cracks, tears or decreased flexibility—**do not** use the tube if these are present.
5. Put obturator into trach tube.
6. Lubricate the replacement tube with saline. **Never** use petroleum jelly (Vaseline) or oil products to lubricate.
7. Place the replacement tube in a clean container. **Do not** touch the part of the trach tube that will be inside your child.
8. Wrap your child in a blanket to decrease movement, if needed, and lie your child flat.
9. Place child on back with small blanket roll under your child’s shoulders to expose tracheostomy site.
10. Suction your child’s trach tube.
11. Remove old trach ties while the person helping you holds the trach tube in place.
12. Gently remove the old trach tube with an outward and upward motion.

Continued on next page.
Changing the Tracheostomy Tube

12. Insert the replacement trach tube immediately with a smooth curving motion toward the back of the neck with a downward and inward motion. If the trach does not go in easily, do not force it! (See if the trach tube will not go in section.)

13. Remove the obturator immediately. Your child can’t breathe with the obturator in place.

14. Your child may cough with the changing of their trach, continue to hold trach tightly and let them have time to calm themselves. You may need to give your child extra oxygen.

15. Inspect the trach stoma site for signs of infection or irritation—redness, swelling, wounds, and/or drainage.

16. While continuing to hold the trach in place perform trach stoma site care. (See stoma site care instructions.)

17. Attach the trach ties while the person helping you holds the trach tube in place.

18. Sit the child up to check to see if the ties are secure and tight. Ties should be tight enough so that you can only slide one finger under the ties.

19. Check child for any trouble breathing or need for suctioning.

20. Look at the removed tube for mucus plugs, mucus color changes, and odor. Report significant changes to your child’s doctor.

21. After a trach change your child may need to be suctioned more often. Secretions may also be pink tinged due to airway irritation.
If Your Child’s Trach Tube Will Not Go In

There may be times that your child’s tracheostomy tube is hard to get in place.

If you have trouble, try doing the following:

1. Reposition the child. Be sure the child is flat. Be sure that the head is tilted back so that you can see the opening in the neck easily. Pull gently up on the chin.

*If the tube still will not go in:*

2. Put saline on the tube to lubricate it more and try again.

*If the tube still will not go in:*

3. Try to put the smaller size tube in.

*If the tube still will not go in:*

4. Put a suction catheter into the opening and hold it in place.

*Is your child able to breathe?*

Yes—call 911 and give oxygen if available.

No—start CPR. Remove the suction catheter from the opening and cover the hole and give breaths by mouth to mouth. Call 911.
Complications

Children who have tracheostomy tubes are at higher risk for some illnesses and problems than children without them. These complications include:

- Trouble breathing
- Pneumonia
- Dehydration
- Cardiac or respiratory arrest (stop breathing)

**Trouble Breathing**

Children usually have trouble breathing because there is mucus in the trach tube. It is normal for the body to make mucus, but it must be suctioned out of the trach tube frequently to prevent problems with breathing.

**Signs of trouble breathing:**

- Breathing fast
- Pulling in of skin between ribs when breathing
- Extreme fussiness, crying or restlessness
- Pale, blue, purple lips
- Nostrils moving in and out when breathing

**Signs of a mucus plug OR trach tube is dislodged:**

- Signs of trouble breathing
- Wheezing or whistling sound
- Mucus seen bubbling from trach tube opening
- Gurgling sound from trach tube
- Rattles felt over the chest

**What to do:**

- Suction the trach tube
- Give oxygen or extra breaths with the breathing bag
- If check does not rise, change the trach tube immediately
- Try to suction again
- Call 911 for help

Continued on next page.
Complications

**Pneumonia**
Children with trach tubes often get a lung infection called pneumonia. When a child gets pneumonia, the air sacs that help you breathe get filled with fluid and mucous and air can not get through the lungs.

**Signs and symptoms of pneumonia:**
- Fever
- More mucus that usual
- Trouble breathing
- Increased coughing
- Mucus that is yellow or green and sometimes with an odor

**What to do:**
- Follow the instructions in this manual to prevent infections
- Suction the trach tube frequently
- Keep the child sitting up as much as possible
- Call your child’s doctor for an appointment or take the child to the local emergency department

**Dehydration**
Children may lose extra fluids for several reasons. The most common are fever, vomiting or diarrhea. Kids with a trach also lose extra water from breathing fast.

**Signs of dehydration:**
- Decrease in wet diapers or urination
- Dark or strong smelling urine
- Dry mouth and tongue
- Thick or sticky trach mucus

**What to do:**
- Give lots of humidity to the trach tube (see humidity section of this manual)
- Give lots of liquids to drink or through the g-tube if your child has one
- Call your child’s doctor
Emergency Procedures

There are times that children with tracheostomy tubes become sick and have trouble breathing. Always be prepared. You will be taught how to give CPR (cardiopulmonary resuscitation) before your child leaves the hospital. The following list of instructions will remind you of the important steps of CPR.

Remember that a child will stop breathing before their heart stops beating. You must keep the trach tube open to help your child breathe. Watch your child carefully. If you think they look sick or are having trouble breathing—help them immediately and call 911.

Keep emergency equipment available and ready at all times. This includes:
- Suction machine and supplies
- Oxygen
- Breathing bag (Ambu bag) and mask
- Saline
- Extra trach tube of the right size and one size smaller

1. Check to see if you can wake your child.
   - Tap your child gently
   - Talk to your child loudly

2. Call for help.
   - If child doesn’t move, blink, or make noise/talk.
   - If someone is with you, send them to call 911.

3. Check for breathing.
   - Lay child on firm flat surface and lift up the chin.
   - To see trach easier, place a rolled up towel or blanket under shoulders.
   - Is child breathing?

   **No Response and no breathing begin CPR**

   - Push hard and fast, at least 100 pushes every minute.
   - How to give compressions.

<table>
<thead>
<tr>
<th>Age</th>
<th>Hand location</th>
<th>Compression depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant</td>
<td>Put 2 fingers of one hand on the breastbone just</td>
<td>Push down at least one third the depth of the chest</td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>below the nipple line</td>
<td>(about 1 1/2 inches)</td>
</tr>
<tr>
<td>Child</td>
<td>Put heel of one hand on the lower half of the</td>
<td>Push down at least one third the depth of the chest</td>
</tr>
<tr>
<td>1-8 years</td>
<td>breastbone</td>
<td>(about 2 inches)</td>
</tr>
<tr>
<td>Child</td>
<td>Put heel of one hand on the lower half of breast-</td>
<td>Push down at least 2 inches</td>
</tr>
<tr>
<td>&gt; 8 years</td>
<td>bone. Put other hand on top of the first hand</td>
<td></td>
</tr>
</tbody>
</table>

Continued on next page.
5. Give 2 breaths.

- Breathing bag to tracheostomy tube
- Mouth to tracheostomy tube
- Breathing bag and mask to face with tracheostomy stoma plugged (using a finger or tape)
- Breathing bag and mask to the tracheostomy stoma.

6. Deliver a set of 30 compressions to 2 breaths until help arrives.
   - If your child begins to move, you can stop the chest compressions and just give the breaths every few seconds.
   - Since your child has been given extra breaths and/or chest compressions, they need to be seen in the emergency room even if they seem fine now.
Tracheostomy Safety

**Clothing**
Keep clothing away from the tracheostomy tube except for a protective scarf. You may want to use a size larger to make dressing your child easier.

**Don’t wear:**
- Anything that blocks the trach tube opening
- Turtlenecks
- Clothes that close in back
- Necklaces
- Clothes that shed lint
- Clothes with buttons

**Do wear:**
- V-neck tops
- Clothes that open in front
- Clothes with snaps, zippers or Velcro
- Cotton bibs

**Food**
Most children with tracheostomy tubes can eat normally. A speech therapist and your doctor can decide if your child can eat safely.

**When your child eats:**
- Stay in the same room with them
- Burp frequently
- Loosely cover the trach with a scarf or cloth
- Always hold the bottle—do not prop it

**Trach Guard**
The tracheostomy guard is a plastic device that fits over the trach tube to prevent it from being blocked by clothes and the child’s chin. It can be worn day or night. Ask your child’s nurse for more information.
Tracheostomy Safety

Activity and Play
Kids of all ages need to play. Choose toys that are for your child’s age and stay with your child. Let your child’s brothers and sisters play with them, but teach them not to touch the trach tube or medical equipment.

Toys to avoid:
- Toys with small parts such as building blocks, wheels, etc.
- Stuffed animals
- Sand
- Swimming pools, sprinklers
- Marbles, beads
- Small doll accessories such as shoes, jewelry

Use of Skin Care Products
Don’t use perfume, powder or aerosol sprays, like hairspray around your child. These will make your child cough and could hurt their lungs or make it hard to breathe.

Smoking
**Don’t Smoke Around Your Child!**
If you smoke, ask your child’s nurse about information to help you stop.

If you want to keep smoking, you have to:
- Smoke outside of your house
- Change your clothes, wash your hands and use mouthwash after every cigarette
- Not smoke in the car, even with the windows down

Smoke will hurt your child’s lungs and make it very hard for them to breathe. The strong smell of smoke stays on your body for a long time so washing after every cigarette will help your child breathe.
Tracheostomy Safety

Bath Time
Children with tracheostomy tubes should be bathed whenever needed. You must keep water out of the trach tube. If water goes into the trach tube it will go right into the lungs.

- Stay with your child at all times during the bath.
- Use shallow water.
- Bath instead of shower—if you must shower-point water spray at stomach or lower. Special shower shields are available from home care suppliers.
- **If water does get into the tracheostomy tube, your child will cough. Suction the trach tube right away.**

Dust/Pets
Dust and hair can easily get into your child’s trach tube. These things will cause your child to cough and could cause an infection. To stop this from happening:

- Keep your home as free from lint and dust as possible.
- Keep your child away from dust and molds.
- In cold or dusty weather, use a loose scarf, mask or artificial nose to warm the air and keep dust out of the tracheostomy tube.
- Do not keep pets with fine hair in your home, such as dogs, cats, rabbits, hamsters or ferrets.

Illness
If your child does become sick, call your child’s doctor right away. Here are some things you can do to help your child stay healthy:

- Wash your hands before touching your child.
- Give healthy foods and drinks to your child.
- Have your child immunized (baby shots, flu shots, etc.).
- Avoid people who are sick.

This is a list of common treatments that may help your child:

- Increase suctioning.
- Increase the amount of humidity.
- Give oxygen or increase the amount of oxygen usually given.
- Give nebulizer treatments if ordered by your child’s doctor.
- Give extra fluids to drink or through feeding tube (if your child has one).

If your child is vomiting:

- Loosely cover the trach with a bib, scarf or artificial nose to keep the vomit out of the tracheostomy tube.
- **If vomit gets into the trach tube, suction the trach tube immediately.**
Traveling with Your Child

Traveling with your child is possible with a few precautions. The most important thing to have with you when taking your child out of the home is an emergency supply bag. This bag is also called a “To Go” bag. The following is a list of supplies that should be kept in your “To Go” bag:

- Trach tubes—one regular size, one a size smaller
- Saline
- Suction machine
- Hand sanitizer
- Scissors
- Bulb suction
- Trach ties
- Suction catheters
- Cotton swabs
- Tissues
- Breathing bag with mask

A bag with these supplies will be given to you by the hospital before you go home.

Traveling tips:
- Always travel with two people. One person to drive and the other to take care of the child.
- Be sure the suction machine’s battery is charged and take the cigarette lighter adapter with you, if one is available.
- Use seatbelts or a properly installed car seat at all times.
- In cold, windy or dusty conditions, cover the trach loosely with a scarf, blanket or mask. If the child is an infant, cover the head with a blanket, this will protect the lungs from irritation. You may use an artificial nose if ordered by your doctor.
Monitoring

Children who have tracheostomies often need some type of medical monitor when they are not being directly supervised. The best and most reliable monitor is a trained caregiver; however, 24-hour supervision is not always possible.

Two of the most common type of monitors are a pulse oximeter or apnea monitor. The purpose of these monitors is to let the caregiver know if there is a change in the breathing pattern of your child. A pulse oximeter measures the oxygen level and heart rate. An apnea monitor measures the heart rate and breathing rate. Your child’s doctor will decide if a monitor is needed. Complete education on the monitor ordered will be done by the home equipment company. When using a pulse oximeter, change the probe site every eight hours.

A baby monitor may be used to help you know when your child is awake and crying. It might be helpful to place the child’s crib in your bedroom or nearby to make monitoring easier.
Equipment Maintenance

It is very important to clean and take care of your child’s medical equipment to control infection. Many of the supplies you will be using are to be disposable (used one time and then thrown away). Supplies in the hospital are almost always disposable. However, when your child is at home it is often necessary to wash and reuse some supplies to help save money. Many insurance companies have a set amount of supplies that they will pay for each month and supplies may need to be carefully washed and reused to have enough supplies for a whole month. The cleaning of some items is not recommended. You will need to check with your doctor, manufacturer or equipment supplier for their recommendations. The following information can be used as a guide for the cleaning of supplies.

**Tracheostomy tubes:**
- Do not use harsh detergents or hydrogen peroxide for cleaning.
- Soak trach tube and obturator briefly in mild soap (like dish soap) solution.
- Use pipe cleaners or trach brush to clean the inside of the tube. Rinse well.
- Air dry completely for several hours.
- Place in clean or sterile container labeled with the date the trach was originally opened—they are typically good to use for 30 days.
- Throw away any trach that has cracks, scratches, tears or decreased flexibility. Also throw the trach away if you cannot read the size letters printed on the neck plate.
- Metal tracheostomy tubes can be cleaned and reused. Wash with soap and water. You may use a pipe cleaner or trach brush to clean the inside. Boil the trach tube in a pan of water for 15 minutes. Allow the tube to cool and dry, then place in a clean or sterile container for storage.
- If your child uses a Bivona® brand tube, see the section in this manual specific for this type.
Equipment Maintenance

Suction equipment:
- Empty the suction container every day. Flush the contents down the toilet.
- Wash the suction container with soap and water every day.
- Change the suction tubing and container every one to two weeks.
- Suction catheters: Rinse and dry after each use, store in clean plastic bag. Throw away at the end of each day or if dropped on the floor.
- Bulb suction: Clean with warm soapy water with each use. Throw away if it becomes foul smelling. Disinfect once a day by soaking it in a vinegar solution for 15 minutes and then rinsing with water. (Vinegar solution: 1 part vinegar, 3 parts water.)

Humidification equipment:
- Nebulizer: Take apart and clean with soapy water once a day. Soak in vinegar solution once a week. Replace every two weeks if needed.
- Trach mask: Clean daily with soap and water. Change trach mask, tubing and drain bag weekly.
- Room humidifiers: Empty, clean with soap and water, rinse and refill each day.
- Artificial noses should not be washed. If it becomes plugged with mucus, throw it away and get a new one.
- Humidity bottle (bubbler): Every three days, empty the water, wash in warm soapy water then rinse. Once a week soak bottle in vinegar solution for 30 minutes and rinse with plain water.
- Disposable, pre-filled humidity bottles need to be changed when empty.
Keeping Your Child Healthy

Keep all doctor appointments. If you must cancel, reschedule the appointment as soon as possible. Try to schedule appointments with different doctors all in the same day, so you only have to take your child out once.

Keep your child’s immunizations up-to-date. Check with your child’s doctor to see if your child should receive any extra immunizations, such as, a flu shot or Synagis® to help prevent the RSV virus.

Wash your hands frequently and be sure all visitors, friends and family members wash their hands before holding or touching your child. Hand washing is the number one way to prevent the spread of infection.

Do not smoke around your child. If you must continue to smoke, do it outside and change your clothes before holding or caring for your child. The smell of smoke hurts the lungs and may cause your child to cough and have trouble breathing.

Avoid other people who are sick. It is also a good idea to avoid large crowds of people such as shopping malls if your child becomes ill easily.

Home Nursing/Community Resources

The hospital social workers and care managers will meet with you and your family to help you find the resources in your community. You may need home nursing care to assist you while you learn to care for your child. The amount of nursing care your child will receive depends on many factors including medical needs, insurance, parents work schedules and doctor’s order.

The levels of nursing care are visits or extended care. A visit is up to two hours of care that can include giving medicines and a check-up of your child. The extended care nursing is often called shift care and consists of having a nurse come to your home for up to 16 hours a day to provide all the medical care that your child needs. The extended care is a lot like the care your child receives in the hospital. A list of home health care companies is available from the care managers and you will have the opportunity to choose a company that will meet your child’s needs. Your insurance company may have a home health care company that they prefer you use.

Other resources that may be helpful to your family are the WIC program, SSI (social security), Medicaid insurance, Medicaid waiver programs and respite care. The details of these programs will be discussed with you as your child’s discharge planning progresses.

If your child is a patient in the hospital, the medical staff will meet regularly to discuss your child’s progress and begin to make arrangements for going home. These meetings are a great time for you to ask questions about your child so write down your thoughts and questions to ask at these meetings, which are also called care conferences.
Home Care

If home nursing care is needed for your child, there are several things that will happen in order for the nursing care to begin. These include:

1. Insurance approval for payment. Some insurance companies do not pay for home nursing care, especially extended care nursing. Other insurance companies will sometimes approve nursing care for a week or two and then re-evaluate the child and family needs. The frequent re-evaluation for nursing care can be frustrating at times, and it is important for you to know that the nursing care is not usually forever. Most insurance companies decrease the amount of nursing care allowed over time.

2. Meeting with the home health care manager or nurse.

3. Develop a schedule that will meet your child’s needs.

4. Home visit by the nursing agency. This is a safety check of your home.

Things that the agency will be looking for might include:

- Safe electrical outlets
- Running water
- Smoke detectors
- Telephone
- Lighting
- Space for storage of supplies/equipment
- Safe entrance/exit in case of fire

The home nursing company that you choose for your child will do everything they can to meet your needs. However, there will probably be times that the nurse is not able to come and care for your child due to illness or weather. It is important that you know all the skills to care for your child’s tracheostomy in case this happens. You will be helping to teach the nurses in your home how to take care of your child. Things you will be teaching might include how to comfort your child, how to feed your child, what do they like to play with, what makes them happy, sad or mad and other helpful hints that you know.

It is a huge adjustment to have strangers in your home for several hours of each day. Try to have reasonable expectations and if you experience problems, talk to the nurse directly about your concerns. If you continue to have problems, then call the nurse manager of your home nursing agency.

Your child has the right to receive a public education. If your child is school-aged, he/she must have someone who is trained in the care of a tracheostomy with them at all times. The hospital staff will help to coordinate with your school officials to arrange for a safe experience at school and during transportation.
Home Care

Other key parts of the discharge process include:
- Arranging specialized therapies such as physical, speech or occupational therapy.
- Contacting the local ambulance service and nearest hospital to provide education and equipment your child may need.
- Contacting the local power and phone companies.

Stress will be high as you learn to care for your child and adjust to having home nursing care.

Some things you can do to reduce your stress might include:
- Learn as much as you can about your child’s health.
- Train at least two other family members/friends how to care for your child so that you can take a break once in a while.
- Take care of your self—eat regularly and sleep as much as you can.
- Ask for help if you need it. If you are wondering or unsure, call your doctor or nurse.
- Keep a calendar for appointments, supply orders, doctor’s visits, prescription refills and therapy visits.
- Take a weekly inventory of supplies and order early to avoid running out.
- Use respite care services if available.
Aerosol/Nebulizer Treatment

There may be times that your child’s doctor prescribes medicine to be given into the lungs. The easiest way to do this is with a nebulizer machine.

Some common medicines that may be given include:
- Albuterol®, Xopenex® or Atrovent®: These medicines open up the lungs and help to loosen mucus. These are bronchodilators.
- Pulmicort®: This is a steroid that is used to help keep the lungs healthy. It decreases inflammation.

Supplies:
- Nebulizer
- Air compressor
- Trach mask
- Medicine
- Saline

Procedure:
1. Plug nebulizer tubing into the air compressor.
2. Unscrew nebulizer cup.
3. Squirt measured ordered medicines into the nebulizer cup.
4. Reattach nebulizer cup.
5. Attach tubing and trach mask to cup top.
6. Turn on air compressor.
7. Hold the trach mask next to the trach opening.
8. Let the mist of medicine blow into the trach opening.
9. Keep the nebulizer cup standing up—if it falls over, the medicine will not come out.
10. Turn the compressor off when the mist has stopped.
11. Suction the tracheostomy tube.
12. Wash nebulizer, mask, blue tubing and nebulizer cup in soapy water, rinse and air dry.
Oxygen

Some children with tracheostomies need extra oxygen. They may need it at all times or just when they are sleeping, sick, eating or playing more actively. When your child is receiving oxygen, it is important to use humidity with it to decrease drying of your child’s airway. (See humidity section of this book for more information.)

Different sources of oxygen:
- Tanks
- Liquid
- Concentrator

It is important to know how much oxygen your child usually needs. Oxygen may be given by the following equipment:
- **Trach ring**: A plastic piece that is connected to tubing and attaches to the oxygen source and onto your child’s trach.
- **Trach mask**: A plastic mask that covers your child’s trach and is connected to the oxygen source with tubing.
- **Ventilator**: Oxygen can be given through the ventilator tubing when breaths are given to your child with the ventilator.
- **Breathing bag**: Used during an emergency to give your child oxygen and breaths.

Signs that your child may need more oxygen are:
- Breathing faster than usual
- Grunting noises while breathing
- Nasal flaring
- Retractions (pulling in of skin over chest)
- Not eating
- Irritability, fussy, crying
- Trouble sleeping and/or increased sleeping
- Shortness of breath
- Gray or bluish color around the mouth
- Low readings on a pulse oximeter monitor, usually below 92 percent

Check with your child’s doctor if your child needs more oxygen than usual.
Oxygen Safety

1. Oxygen will not catch fire by itself, but it will make a fire spread easy and fast. Therefore:
   - Never smoke in the home when oxygen is in use.
   - Place a no smoking sign on the doors to your house.
   - Do not cook while holding your child.
   - Do not use grease or oil on the equipment for your child.
   - Do not use baby oil or Vaseline on your child.
   - Do not use a hair dryer, electric blanket, space heater, or other heat producing electronics around your child because they may spark and start a fire.
   - Keep your child away from fireplaces and wood burning stoves.
   - Have a working smoke detectors and fire extinguisher in your home.

2. Store oxygen tanks standing up in a secure and well-ventilated area.

3. Be careful not to trip on the oxygen tubing. Supervise children to keep them from tangling themselves in the oxygen tubing. Taping the oxygen tubing to your child’s back will help keep them from becoming tangled.

Leaving Home

1. Your child should always travel in a car seat or seatbelt according to the law.

2. Oxygen tanks are heavy and may tip over a stroller or wheelchair—place the tank carefully.

3. Always expect to need more oxygen in case you are delayed on your return home. Bring extra oxygen with you.

4. If you are traveling out of town, talk to your oxygen supply company before leaving to get extra oxygen delivered in the town you are staying.

5. If traveling by airplane, call the airline a few weeks ahead of time to make special arrangements for passengers using oxygen.

Speech with a Tracheostomy

Talking occurs by a continuous stream of air that comes from the lungs and passes by the vocal cords as we breathe out. The vocal cords then move and shape the air as it passes through to produce sound. That sound is then shaped in the mouth to produce speech. When a child has a tracheostomy, speech/voice production may be affected because the trach tube changes the route of all or some of the exhaled air away from the vocal cords and out the trach.

How much sound a child can make will depend on how open the airway is and how the vocal cords are working. Different sizes of trach tubes are needed based on the child’s medical condition. If the tube is small, all of the exhaled air will be pushed out the tube and no air will be able to pass around and go up the vocal cords to make sound. Children with smaller tubes sometimes can get air around the trach tube and by the vocal cords to create sound. If the airway is very small, the child may not be able to move enough air past the vocal cords to talk.

Vocalization with a tracheostomy:
- The child may learn to move air around the trach, if it is not a snug fit. It initially may happen accidentally when the child is crying or laughing, and then once they know how it feels that can make it happen again.

- Plugging the tracheostomy tube by holding a finger or placing a cap over the tube for short periods of time. This requires cuff deflation if it is a cuffed tube.

- The child may learn to cover the trach with his/her chin or finger when talking.

- A Speaking Valve is a one-way valve that allows air in but not out. This forces the air around the tracheostomy tube, through the vocal cords, and out of the mouth upon breathing out, letting the child make sounds. Speaking valves cannot be used if you are having trouble breathing. You can speak with your child’s physician or speech-language pathologist to see if a Speaking Valve would be helpful for your child.

- Fenestrated tracheostomy tubes (for older children) have an opening, which allows air to pass through the vocal cords. Cuff on trach tube may remain inflated.

If a child is not able to speak using any of the above possibilities, then a different way of communication is necessary. Different ways of communication include sign language, picture communication, or augmentative communication/voice output devices.
A speech-language pathologist can help you choose the best option. Speech and language development can be changed a lot by the need for a trach. Continuing to stimulate speech and language development is very important, and the help of a speech-language pathologist is highly recommended. There are different options for speech services, both educational-based and medicine-based. Education based services are provided free to your child through the local schools.

The birth to 3 years, Early Intervention Services, are given in your home. Then between 3 and 5 years of age, services move to a classroom setting. Educational therapy continues to be offered for school-age children. Medicine-based therapy is dependent on insurance coverage or private pay and is available at various outpatient centers (e.g., Pediatric Therapy Services Department). Many children receive both types of services.
Sign Language

Below you will find some possible signs for your child to use for communication of their wants and needs:

**bed**
Place right palm on right cheek and tilt head slightly.

**father**
Five shape RH palm left. Place thumb on forehead and wiggle fingers.

**cookie**
LH open B palm up, tips out. Place tips of RH in left palm and twist as if cutting out cookies.

**eat (alt.)**
Circle right A at mouth as if spooning in food.

**drink**
Mimic holding and drinking glass of water with C shape RH.

**cracker**
Tap left elbow several times with right A.

**more**
Flat O shape both hands, palms and tips facing. Tap tips together twice.

**milk**
Claw shape both hands, palms facing. Alternately squeeze down into S shapes, as if milking cow.

**hurt**
One shape both hands, palms in, tips facing. Move back and forth toward one another. (Sometimes made with H handshapes.)

**finish**
Five shape both hands, palms in. Turn suddenly so that palms and tips face out.

**mother**
Five shape RH palm left. Place thumb on chin and flex fingers.

**play**
Y shape both hands, palms in. Simultaneously twist back and forth.

**thank (you)**
RH open B palm in, tips up. Place tips on chin or lips. Move out as if throwing a kiss.

**please**
Rub right palm in clockwise circle against upper chest.

**sit**
H shape both hands, palms down, left tips slanted right, right tips slanted left. Rest right H on left.

**sorry**
Circle right S on chest.

**stand**
LH open B palm up. Stand tips of right V on left palm.

**walk**
Open B both hands, palms down, flip out. Flip forward several times alternately.
Passy-Muir Speaking Valve (PMV)

The Passy-Muir Speaking Valve (PMV) gives patients with tracheostomy tubes the ability to breathe more normally and help them talk.

How the Passy-Muir Valve Works
The PMV opens when the child breathes in, letting air enter the trach tube and lungs. At the end of breathing in, the PMV closes and remains closed while breathing out, without any leakage. When breathing out, the air is then moved around the trach tube and up through the vocal cords and mouth. This gives the child a more normal closed respiratory system. The valve will open when breathing out if necessary and/or be “shot off” (forced off with the breath). This allows the vocal cords to move and sound to be made.

Potential benefits with use of the PMV are as follows:
1. Makes a closed respiratory system that gives positive airway pressure. That pressure gives louder sounds, improves swallowing, and increases the amount of oxygen received.

2. Improves feeling in the throat as well as smell sensation, which can improve swallowing and may reduce the chances of food or liquids entering the lungs (aspiration).

3. Improved swallowing also gives a stronger, better cough.

Important reminders:
- Children should use the PMV 2000 (clear) or 2001 (purple).
- Children must be awake to have PMV on. **Do not wear while sleeping.**
- Children need to be supervised during use of PMV.
- Trach cuff needs to be deflated prior to placing the PMV.
- Some children with severe airway blockage or respiratory problems can not use the PMV.
- Humidification may be decreased. Your child may need more humidity at night if using the PMV during the day.
- PMV may be used with oxygen, a ventilator or humidity in place.
Eating with a Tracheostomy

Many children with tracheostomy tubes can eat normally. If your child could eat by mouth before the trach surgery, they will probably be able to eat by mouth after the surgery incision heals. The trach tube can sometimes change the way the child swallows because the voice box moves less. When the voice box doesn’t move properly, food and saliva can get into the lungs which can cause pneumonia.

A speech-language pathologist may be consulted to help decide if the child’s swallow is safe. They will assist the family and medical staff in determining the best diet and feeding plans.

Evaluation by a speech-language pathologist may include a bedside evaluation and/or a video swallow study. A video swallow study is a test completed in radiology with a radiologist that allows the swallow to be watched. Barium contrast is added to foods or liquids and the swallow is seen on x-ray. Many different things can be done to make the swallow safer if your child has trouble swallowing.
Bivona® Tracheostomy Tubes

Bivona® tracheostomy tubes are made of silicone and need to be cared for in a special way. The following is a list of helpful hints to follow if your child has a tracheostomy tube made by Bivona:

- Every new tracheostomy tube contains a package insert with directions for use. Save this piece of paper in a safe place, so that you can look at again later if needed.

- Every tracheostomy tube comes with a disconnect wedge. This wedge makes it safer and easier to take off attachments such as ventilator tubing or oxygen without pulling, pushing or twisting the tube; which may cause pain. Always have the disconnect wedge with you and use it every time you need to take off an attachment.

- If you need to lubricate the tube before placing it into the stoma, use only a water-soluble lubricant such as KY Jelly®.

- The Bivona tracheostomy tube contains a metal coil. The tracheostomy tube must be removed and replaced with a tracheostomy tube made of plastic or pvc before having an MRI, laser procedure or surgery.

- Each Bivona tracheostomy tube can be cleaned and reused for approximately 6 to 12 months if cleaned and used correctly. The tube should be looked at before each use for any damage such as cracks, cuts or grooves.
Cleaning the Bivona® Tracheostomy Tube

To clean the Bivona® tracheostomy tube:

1. Remove swivel by placing the disconnect wedge between the swivel and neck plate.
2. Place mild, fragrance free, clear soap in clean container.
3. Wash tracheostomy tube inside and outside with the soapy water. You may gently use a tracheostomy brush if needed to remove dried mucus.
4. Rinse with water, set tracheostomy tube aside and allow to completely air dry.
5. Wash, rinse and dry the obturator in the same manner.
6. When the tracheostomy tube and obturator are completely dry, place them in a clean plastic container or bag for storage.
7. Immediately before using the tube, remove the tracheostomy tube from the plastic container, place in a pan of boiling distilled water. Cover the pan and remove from heat and let cool. When the water is cool, remove the tracheostomy tube and obturator by holding onto the neck plate.
8. Insert the tracheostomy tube as directed by your child’s doctor.
Cuffed Tracheostomy Tubes

A cuff is a small balloon that is located at the end of the tracheostomy tube. This balloon can be blown up (inflated) with air to seal the airway. A complete seal of the airway is often needed when a child requires the use of a ventilator or has difficulty with secretions going into the lungs.

The cuff needs to be inflated with the smallest amount of air possible to seal the airway. The hospital staff will teach you how to check for the correct amount of air.

**Special things to remember if your child has a cuffed tracheostomy tube:**
- Blow up the cuff with air to check the balloon before putting it into your child.
- Be sure the cuff is completely flat (deflated) before putting it into your child.
- Cuff must be blown up when the child eats.
- Cuff must be flat (deflated) when using a speaking valve.
- A cuffed tracheostomy tube can’t be cleaned and used again.
Inner Cannula Care

Some older children and teenagers have tracheostomy tubes that have an inner cannula. The inner cannula is the most important part of the two-part tracheostomy tube. It is the piece that keeps the airway open. Most tracheostomies have disposable inner cannulas. These should be changed once each day. Do not leave the inner cannula out of the trach tube for longer than 15 minutes.

Procedure:
1. Wash your hands.
2. Open new inner cannula package, put a few drops of saline on the inner cannula.
3. Remove the old inner cannula by pinching the sides to unlock and then gently pull up and out.
4. Suction if needed.
5. Put new inner cannula in by squeezing the sides and sliding into the outer cannula.
6. Check the inner cannula to be sure it is locked in place by pulling gently. The inner cannula should not move without squeezing the sides.
Many children who receive tracheostomy tubes also need the help of a breathing machine or ventilator. Most of the teaching will be done by the home equipment company respiratory therapists. Your nurses will also be available to help you understand and answer your questions.

Reasons a child may need to be on a ventilator:
- Unable to breath on own.
- Support for a weak breathing pattern.
- To prevent fatigue and allow for rest.

Some children need the help of the ventilator all of the time. Other children may only need the to use the ventilator when they are sick or sleeping.

**Settings/Monitoring**
The doctor will determine the ventilator settings that will help your child. Only the doctor can decide when to change the ventilator settings. **Do not ever change the ventilator settings by yourself!**

Look at your child’s breathing and ventilator settings several times a day (ventilator settings page 2). If your child is having trouble breathing, check ventilator settings. If they are different, call your home medical equipment company immediately. If your child is not breathing easily call 911.

**Look for these problems:**
- Very fast or very slow breathing, sucking in of chest.
- Blue, gray or purple color of lips ,skin or fingernails.
- Is your child extra sleepy or extra irritable?
Home Ventilator Guide

Ventilator Problem Guide
If problems occur with the ventilator refer to the directions for “trouble shooting” or call the home equipment agency.

If there is a concern related to your child’s medical needs call your child’s doctor (increased oxygen needs, trouble breathing or agitation when on the ventilator).

Problem solving ventilator alarms:

- **Low pressure alarm.** Things to check:
  - Is the ventilator tubing secure on the trach?
  - Is the trach cuff blown up (if your child has one)?
  - Is the ventilator tubing disconnected?
  - Is there water in the tubing?

- **High pressure alarm.** Things to check:
  - Does the child need to be suctioned?
  - Is there water in the tubing?
  - Is the tubing kinked or pinched?
  - Is the trach tube blocked?
  - Is the child coughing or crying?

- **Low power alarm.**
  - Check to see if the ventilator is plugged into an electrical outlet. If you are using the battery and you get a low power alarm, change to a new battery or plug into the electrical outlet.

If the electricity goes off in your home and your battery does not work:
1. Remove ventilator tubing from the trach tube.
2. Give breaths with breathing bag until power comes on or help arrives.
3. Call 911 if the power does not come back on immediately.
Words to Know

The following is a list of words that you will find in the manual as well as some words you may hear the doctors and medical team say while your child is in the hospital. Please ask your nurse or doctor if you do not understand a word that you hear or read.

A

**Aerosol**: Solution that is given in a mist.
**Apnea**: Not breathing.
**Apnea monitor**: A machine that alarms when a child stops breathing.
**Artificial airway**: Another word for tracheostomy tube.
**Artificial nose**: A device that warms and moistens the air your child breathes.
**Aspiration pneumonia**: Pneumonia caused by foreign material such as food entering the lungs.
**Asthma**: Difficulty breathing with wheezing that is caused by swelling or spasms of the bronchial tubes.
**Atresia**: A narrowing of a structure usually caused by the failure of proper fetal Development.

B

**Bacteria**: Germs that grow and cause infections.
**Breathing bag**: Device used to pump air into the lungs by hand (not machine).
**Bronchi**: The two main branches leading from the trachea to the lungs.
**Bronchiolitis**: Inflammation of the Bronchioles.
**BPD (bronchopulmonary dysplasia)**: Chronic lung disease of infancy—often requires a tracheostomy for long term ventilator use.

C

**Cannula**: The tube part of the tracheostomy tube.
**Carbon Dioxide (CO₂)**: Gas eliminated from the lungs with exhalation.
**Cardiopulmonary resuscitation (CPR)**: A method to restart breathing and the circulation of blood.
**Catheter**: Tube used to remove fluids from the body.
**CO₂ monitor**: A device that measures the amount of carbon dioxide in the blood through an external monitor.
**CPAP (continuous positive airway pressure)**: A type of ventilation mode that supports a child's own breathing efforts.
**Cuff**: The inflatable balloon on some tracheostomy tubes.
**Cyanosis**: A bluish discoloration of the skin, lips and nail beds due to decreased oxygen in the blood.

D

**Decannulation**: Removal of the trach tube.
**Decannulation cap**: A small cap used to plug the tracheostomy opening during weaning from the tracheostomy.
**Dysphagia**: Difficulty swallowing.
Words to Know (cont.)

**E**
- **Edema**: Swelling of tissue.
- **ET tube (endotracheal tube)**: A tube used to provide an airway through the mouth or nose into the trachea.
- **ENT**: Abbreviation for ear nose and throat—term used for type of doctor that typically performs the tracheotomy surgery.
- **Exhale**: Breathe out.
- **Extubation**: Removal of the endotracheal tube.

**F**
- **Fenestrated**: Having an opening in the trach tube to allow vocalization.
- **Flange**: Part of trach tube that rests against the neck, contains information on tube brand and size.

**H**
- **Heat moisture exchanger (HME)**: A filter device that fits into the end of the trach tube to warm and moisten the air the child breathes.
- **Home healthcare provider**: Company who provides nursing care at home.
- **Home healthcare supplier**: Also called durable medical equipment supplier where you get medical equipment.
- **Humidity**: Moisture in the air.
- **Hydrogen peroxide (H₂O₂)**: Mild antiseptic and cleaning agent.
- **Hypoxia**: A low amount of oxygen in the blood.

**I**
- **Inhale**: To breathe in.
- **Inspiration**: To breathe in.
- **Intubation**: Placement of a tube into the trachea to provide assistance with breathing.

**L**
- **Larynx**: The voice box.
- **Lumen**: Inside part of a tube.

**M**
- **Malacia**: A softening of the affected structure.
- **Mucus**: Slippery fluid that is produced in the lungs and windpipe.

**N**
- **Nebulizer**: A machine that puts moisture and or medications directly into the airway and lungs.
- **Neck plate**: Also called the flange.
- **Neonatal**: The first 28 days after birth.
- **Nosocomial infection**: An infection acquired in the hospital.

**O**
- **O₂**: Oxygen, an essential gas of respiration.
- **Obstruction**: Blockage.
- **Obturato**: The semi-rigid guide that goes in the tracheostomy tube to help insert the tube into the trachea.
- **Otolaryngologist**: Ear, nose and throat doctor.

**P**
- **Pharynx**: Passageway for air from the nasal cavity to larynx.
- **Pliable**: Soft and flexible.
- **Pneumonia**: An inflammation of the lung itself often caused by the consolidation of the affected part by the air spaces being filled with blood, bacteria, cells or fibrin.
- **Pulmonologist**: A doctor who specializes in the lungs.
- **Pulse oximeter**: Device that monitors the oxygen level of the blood using an infrared sensor placed on the finger or toe.
Words to Know (cont.)

R

Respiratory Syncytial Virus (RSV): A common respiratory infection that can be very serious for some infants and children.

Respite: A break or temporary relief for caregivers who care for loved ones with disabilities at home.

Retractions: Pulling or sucking in of the chest muscles, neck muscles and diaphragm during breathing, it’s a sign of respiratory distress.

S

Saline: (normal saline or 0.9% sodium chloride) Salt water solution similar to fluids found in the body.

Secretions: Another word for mucus.

Speaking valve: Also called Passy-Muir; one-way valve that lets air come in through the trach but then sends it out the vocal cords and mouth to make talking possible.

Speech therapist: A person trained to help with speaking, swallowing and communication problems.

Stenosis: The narrowing of a structure.

Sterile: Free of germs.

Stoma: Surgical opening in the neck where you insert the tracheostomy tube.

Suctioning: Vacuuming up fluid, such as mucus from trach tube.

Swaddle: To wrap a baby like a mummy with only the head sticking out.

Syringe: Device to measure medicines.

T

Thermovent T: Brand name device that warms and moistens the air breathed in.

Tracheostomy: An opening into the trachea.

Tracheotomy: A medical procedure creating an opening in the trachea.

Trach mask: A device that fits on the end of the trach tube to provide moisture.

V

Ventilator: A machine that helps a person breathe.

Virus: A germ that can cause illness.

Viscid: Thick or sticky.

Vocal cords: Two strips of tissue in the voice box in the neck, which allows vocalization.

W

Wheeze: A whistling sound resulting from a narrowing in the respiratory tract.
Bibliography


4. www.passy-muir.com

5. www.tracheostomy.com


