

## Tracheostomy Care at Home

This information will help you understand how to care for a person with a tracheostomy at home. It is a supplement to the education offered in the hospital.

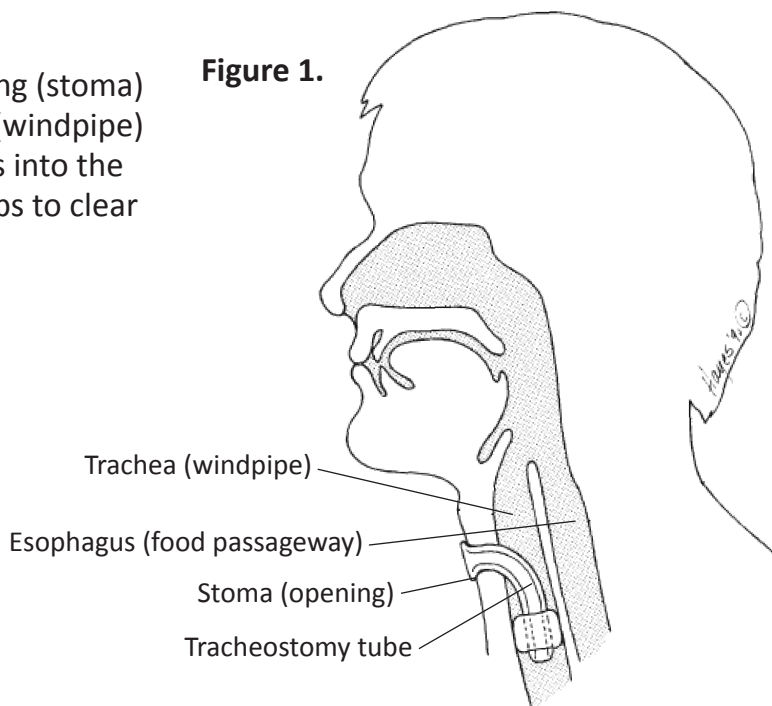
*To help prevent infection, keep all equipment clean.*

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### Tracheostomy

A tracheostomy (trach) is an opening (stoma) through the neck into the trachea (windpipe) (Figure 1). A plastic trach tube goes into the stoma. It acts as an airway and helps to clear secretions from the lungs.

**Figure 1.**

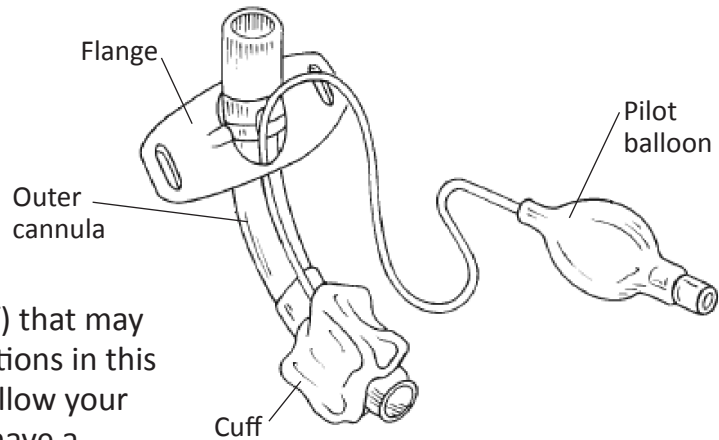


Most trach tubes have 3 main parts:

- **Outer cannula** (tube) to maintain the airway (Figure 2)
- **Inner cannula** to prevent secretions from building up and blocking the airway
- An **obturator** to help insert the outer cannula

Some trach tubes have a balloon (cuff) that may be filled with air or water. The instructions in this handout are for air-filled cuffs. Follow your healthcare team's instructions if you have a water-filled cuff.

**Figure 2. Trach tube outer cannula**



## Supplies

The nurse or therapist will talk with you about how to care for a trach and the needed supplies. They will order the supplies you will need at home. You can get more supplies from a home health or medical supply company.

Tracheostomy tube size: \_\_\_\_\_

Suction catheter size: \_\_\_\_\_

Depending on your trach tube, you will need some or all of these supplies:

- 2 new trach tubes (1 the same size and type as above and 1 smaller)
- Suction catheters
- Suction connecting tubing
- Suction machine
- Yankauer suction tips
- Soft trach holders or fabric trach ties
- Manual ventilation device (Ambu® bag)
- Trach pre-slit drain sponges
- Cotton-tipped swabs
- Gauze (4 inches x 4 inches)
- Scissors
- Disposable medical gloves
- Trach care kits, including:
  - 2 metal or plastic bowls with lids
  - Small cannula brush

- Pipe cleaners
- 3% hydrogen peroxide solution
- Oxygen (if needed)
- Humidity machine (if needed)
- Sterile saline in container
- Sterile water
- Sterile water-based lubricant
- 10 milliliter (mL) syringes (not needed for cuffless tubes)

## Aseptic technique for infection control

The mouth and nose act as natural barriers against bacteria and infection. A person with a trach does not have the same protection from infection as people who breathe through their mouth and nose. The stoma provides a direct pathway to the lungs, so it is easier for bacteria to get into the lungs. **To help prevent infection, keep all equipment as clean as possible. The person with a trach should avoid close contact with people who have respiratory infections.**

Aseptic (preventing contamination with germs) technique also helps prevent infection. This includes:

- Careful handwashing
- Keeping the work surface clean
- Storing supplies in their packages (or as directed) and away from children and pets

### **Handwashing**

Before and after caring for a person's trach, carefully wash your hands using these steps:

1. Remove jewelry from your hands and wrists.
2. Wet your hands and wrists with clean, running water.
3. Use plenty of soap and water for a good lather.
4. Scrub under your fingernails.
5. Rub your hands all over, including your palms, back of your hands, fingers and between your fingers.
6. Scrub your hands for at least 2 minutes and wash up to your wrists.
7. Rinse your hands by holding them with your fingers pointing down and the water running down from your wrist to your fingers (dirty water flowing downward).
8. Use a clean towel to turn off the water.
9. Dry your hands well.

After caring for a person's trach, you can use hand cream after you wash your hands to prevent dry, cracked skin.

## Humidity

Breathing through the nose and mouth warms and humidifies the air we breathe. A trach tube bypasses the nose and mouth. This can cause thick, dried secretions or a blocked tube. A person with a trach tube needs another way to moisten the air they breathe. To do this, they can use these:

- Humidified air system with a trach collar
- Room humidifier
- Heat and moisture exchanger

A heat and moisture exchanger traps exhaled moisture and lets a person inhale it with the next breath. During travel, they can use an atomizer or misted saline (such as Ocean® saline nasal spray) for humidity.

Remember, a person with a trach is prone to mucus plugs and thick secretions. The best way to keep secretions thin is to take in more fluids and do physical activity.

## Manual ventilation with an Ambu bag

An Ambu bag is a self-inflating, hand-held device used to deliver breaths. You can use it to give breaths to someone who is dependent on a ventilator that is not in use. You can also use it to give extra breaths and oxygen to the person before and after suctioning.

### ***How to use the bag***

- If oxygen is needed, attach the long tubing to the oxygen tank and turn the supply to 10 to 15 liters per minute.
- Disconnect the ventilator tubing from the trach tube and attach the bag to the trach tube.
- Squeeze the bag as the person breathes in and let it self-inflate as the person breathes out.
- Give 10 to 12 breaths per minute or 1 breath every 5 or 6 seconds. If the person is normally dependent on a ventilator, give breaths at about the same rate as the ventilator rate. Give breaths more quickly before or after suctioning and hold for 2 to 3 seconds.

## Suctioning

### ***The trach tube needs to be suctioned when:***

- The high pressure alarm goes off on the ventilator.
- The person asks to be suctioned or you can hear gurgling sounds.
- The person cannot cough out the mucus.
- The person has trouble breathing

### ***How to suction a trach tube:***

1. Clean the work surface and get the supplies and equipment ready:
  - Turn on the suction machine.
  - Attach the suction catheter to the suction machine.

- Pour sterile saline into a clean bowl.
  - Attach the Ambu bag to oxygen, if needed.
2. Wash your hands. Put on the gloves.
  3. Disconnect the ventilator tubing from the trach tube and attach the bag to the trach tube.
  4. Use the Ambu bag to give 3 deep breaths, 2 to 3 seconds each.
  5. Disconnect the bag. Insert the suction catheter quickly, but gently, until you meet resistance or the person coughs.
  6. Apply suction by placing your finger over the hole in the catheter. Pull the catheter out, twisting it slightly as you pull. Do not apply suction for more than 10 seconds.
  7. Attach the Ambu bag to the trach tube and give 3 deep breaths again.
  8. Suction a little saline into the catheter to rinse it.
  9. If needed, repeat the suctioning.
  10. Connect the ventilator.
  11. Rinse the suction catheter and wipe it dry. Allow it to air dry on a paper towel until the next use.
  12. Take off the gloves and throw them away.
  13. Wash your hands.

Note: After 24 hours, throw the old suction catheter away and use a new one.

Secretions should normally be clear or white and move easily through the tubing. Call your healthcare team if secretions change in the color, thickness or amount, or if they are foul smelling.

## **Stoma care**

The stoma is the opening through the neck. It is important to keep the stoma as clean and dry as possible. Clean the stoma area and apply a new trach sponge 2 to 3 times a day, or more often if needed.

1. Clean the work surface and gather these supplies:
  - Trach pre-slit drain sponge
  - Soft trach holder (or fabric tape)
  - Cotton-tipped swabs
  - Scissors
  - Sterile saline in container
  - Hydrogen peroxide in container
  - Gauze (4 inches x 4 inches)
  - Disposable medical gloves
2. Wash your hands.

3. Put on the gloves.
4. Remove and throw away the old trach sponge.
5. Take off the gloves. Throw them away.
6. Wash your hands.
7. Put on clean gloves.
8. Clean the area around the stoma with soap and water, using the cotton swab and gauze.
9. Use a dry gauze pad to dry the skin well around the stoma.
10. If the trach holder (or trach tie) is dirty, replace it with a new one. If you use fabric ties, tie them snugly and knot them. Only 1 finger should fit between the tape and the neck. Take care not to cut the pilot balloon when cutting the tie.
11. Apply a new trach sponge under the flange.
12. Take off the gloves and throw them away.
13. Wash your hands.

Call your healthcare team if you notice any of these around the stoma:

- Drainage or pus
- Redness
- Bleeding
- Swelling
- Moisture

### **Inner cannula of the trach tube care**

Change a disposable inner cannula at least 1 time every day. Clean a reusable inner cannula 2 or 3 times a day. It is best to clean it when you do trach and stoma care.

1. Clean the work surface and gather these supplies:
  - Temporary trach tube inner cannula (if needed)
  - For a reusable trach tube inner cannula
    - Hydrogen peroxide in container
    - Sterile saline in container
    - Small cannula brush
    - Pipe cleaners
    - Temporary inner cannula
  - Disposable medical gloves
2. Wash your hands.
3. Put on the gloves.
4. Disconnect ventilator, if applicable.

5. Remove the inner cannula, if applicable. If the inner cannula is disposable, replace it with a new one. If the inner cannula is reusable, not disposable, complete the following steps to clean it:
  - 1) Place the inner cannula in a container filled with hydrogen peroxide.
  - 2) Quickly insert the temporary inner cannula, and lock the cannula in place.
  - 3) Attach the ventilator tubing back to the trach tube.
  - 4) Clean the dirty inner cannula with the cannula brush. Rinse it well in the sterile saline container and shake it dry. Dry the inside of the cannula with a clean pipe cleaner.
  - 5) Disconnect the ventilator, if applicable.
  - 6) Remove the temporary inner cannula. Place it in the hydrogen peroxide container.
6. Quickly insert a new or cleaned inner cannula, and lock the cannula in place. Attach the ventilator tubing back to the trach.
7. If you used the temporary inner cannula, clean and store it in a clean, dry container.
8. Take off the gloves and throw them away.
9. Wash your hands.

## **Tracheostomy cuff**

The cuff is usually kept inflated when the person is attached to a ventilator. This allows the ventilator to deliver the air directly to the lungs by preventing air from leaking around the trach tube. Inflating the cuff also helps prevent any food or fluid from going into the lungs. The person cannot make any sounds with their voice or talk when the cuff is inflated. To decrease pressure on the trachea, the cuff is kept in a slightly deflated state. This is called a “minimal leak.” Only deflate and inflate the cuff when changing the entire trach tube or if the person can make sounds when the cuff should be inflated.

### ***Minimal leak cuff inflation***

1. Clean the work surface and gather these supplies:
  - 10-mL syringe
  - Suction equipment
  - Disposable medical gloves
2. Wash your hands.
3. Put on the gloves.
4. Suction the trach with a suction catheter.
5. Use a Yankeaur tip to suction deep in the back of the mouth. (This may cause gagging.)
6. Deflate the balloon by attaching the syringe to the end of the pilot balloon.
7. Pull on the syringe plunger until the pilot balloon is flat.

8. Disconnect the syringe and fill it with 10 mL of air.
9. Attach the syringe and slowly insert air while holding your hand above the person's mouth. At first, you will be able to feel breath on your hand. When the cuff is inflated, you will not be able to feel any breaths. This usually happens after you put 4 to 8 mL of air in the cuff.
10. Pull back on the syringe 0.5 mL, creating a "minimal leak."
11. Disconnect the syringe.
12. Take off the gloves and throw them away.
13. Wash your hands.

## Changing the tracheostomy tube

Follow your healthcare team's instructions for how often to change the entire trach tube. You will need to change it if the cuff is torn, the pilot balloon is cut or you have a hard time passing a suction catheter.

1. Clean the work surface and gather these supplies:
  - New tracheostomy tube (same size as the current trach)
  - Suction equipment
  - 10-mL syringe
  - Trach holder or trach ties
  - Trach pre-slit drain sponge
  - Scissors
  - Water-soluble lubricating jelly, such as Surgilube® (do not use Vaseline®, face cream or baby oil)
  - Disposable medical gloves
2. Wash your hands.
3. Put on the gloves.
4. Prepare the new trach tube:
  - 1) Remove the inner cannula and put in the obturator.
  - 2) Test the cuff for leaks. Put 10 mL of air in the pilot balloon. Check that the cuff inflates and stays inflated.
  - 3) Withdraw the air to deflate the cuff.
  - 4) Attach the trach holder or trach ties to the flange.
5. Lightly coat the tip of the trach tube with lubricating jelly.
6. Lay the person with the trach in a flat-lying position.
7. Suction through the trach tube first and then in the mouth.
8. Attach the syringe to the pilot balloon and deflate the cuff.
9. Remove the old trach tube.



10. Insert the new trach tube straight back into the trachea and then downward to follow the path.
11. Remove the obturator (the person cannot breathe with the obturator in place).
12. Insert the inner cannula.
13. Inflate the cuff to a “minimal leak” (see page 7).
14. Suction if needed.
15. Secure the trach holder or trach ties around the person’s neck and put a new trach sponge under the flange.
16. Attach the ventilator tubing to the trach, if applicable.
17. Make sure the person is breathing without difficulty.
18. Take off the gloves and throw them away.
19. Wash your hands.

## Infection

Contact your healthcare team if you notice any of these signs:

### ■ Trach site infection

Signs of a trach site infection may include:

- Redness
- Swelling
- Pain
- Pus
- Drainage
- Streaks of blood and foul odor from the trach site

### ■ Lung infection

Signs of a lung infection may include:

- Blood-tinged, yellow or green secretions
- Thick, foul-smelling secretions
- More secretions
- Change in respiratory rate
- Increasing shortness of breath
- Increased coughing
- Wheezing and fever

## Emergency troubleshooting

### ***Trouble breathing***

Mucus from the airway can collect inside the trach tube. A mucus plug is when the buildup of thick secretions blocks the airflow in the trach tube. The first sign of a mucus plug may be trouble breathing. If the person suddenly has trouble breathing, ask them to take a deep breath and cough. If they still have trouble breathing:

1. Check the inner cannula for a buildup of secretions or a mucus plug.
2. Suction the trach to remove the secretions.
3. Clean or change inner cannula if it is clogged.
4. **If the person is still having trouble breathing, call 911 for emergency help. Then, do the following until help arrives:**
  - Use the Ambu bag to forcefully give breaths. This will make the person cough.
  - If this does not dislodge the plug, change the entire trach tube.
  - If the person still cannot breathe, give them the Heimlich maneuver to dislodge a mucus plug. (You may need to do this with the tube out of the stoma).

### ***Trach tube falls out***

Replace the trach tube if possible. A new tube should always be nearby.

### **If the new tube will not go in, call 911 for emergency help.**

- If the person can breathe through the stoma, stay with them until help arrives.
- If the person cannot breathe through the stoma, cover the stoma, and give mouth-to-mouth rescue breathing until help arrives.

### ***Tracheostomy tube is blocked***

- Move the tube from side to side a little. If it is still blocked, deflate the cuff and try to suction the trach tube.
- Clean or change the inner cannula to remove the blockage.

### **Call 911 for emergency help if the trach stays blocked and the person has trouble breathing.**

While waiting for help to arrive:

- Change the whole trach tube.
- Give the person the Heimlich maneuver to dislodge the blockage. (You may need to remove the trach tube first.)

### ***Cuff leak***

Replace the whole trach tube if the pilot balloon is flat and does not inflate. This is not an emergency, but stay with the person until the new trach tube is in.

## Important telephone numbers

Nursing care company \_\_\_\_\_

Equipment supply company \_\_\_\_\_

Respiratory nurse or therapist (home) \_\_\_\_\_

Respiratory physician \_\_\_\_\_