

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.

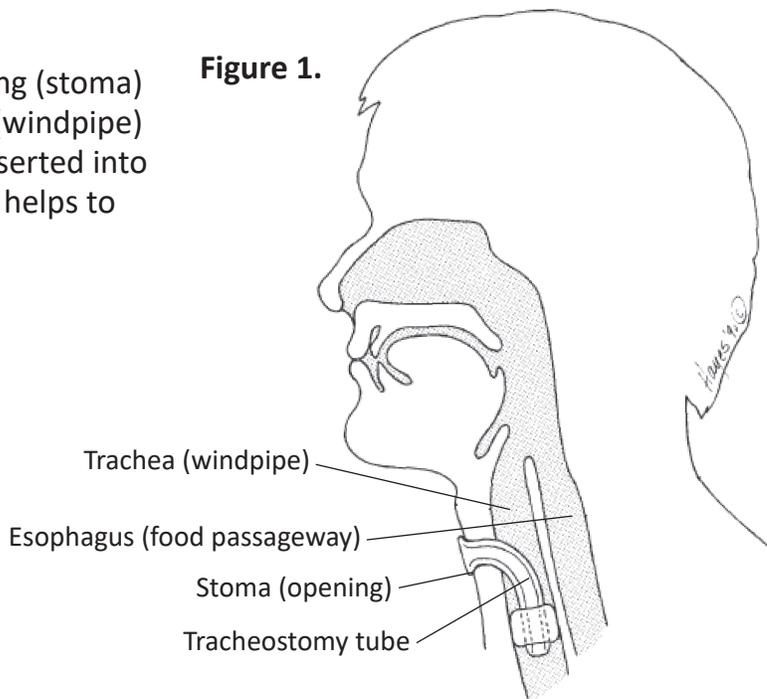
To help prevent infection, keep all equipment clean.

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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 is inserted into the stoma. It acts as an airway and helps to clear secretions from the lungs.

Figure 1.

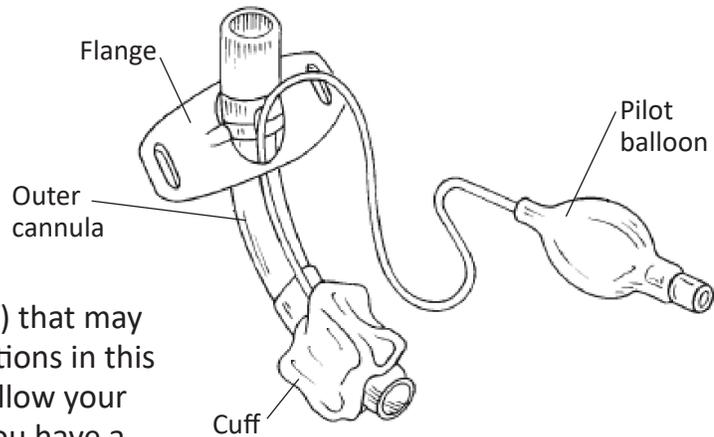


Most trach tubes have 3 main parts:

- **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 provider's instructions if you have a water-filled cuff.

Figure 2. Trach tube



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. Many supplies can be obtained 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 those 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 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.

Routine use of hand cream can help prevent dry, cracked skin.

Humidity

The air we breathe goes through the nose and mouth where it is warmed and humidified. A trach tube bypasses the nose and mouth. This can result in thick, dried secretions and a blocked tube. A person with a trach tube needs another way to moisten the air they breathe. This can be done by using a:

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

A heat and moisture exchanger traps exhaled moisture and allows it to be inhaled. During travel, an atomizer or misted saline (such as Ocean[®] Saline Nasal Spray) may be used 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 increase fluid intake and physical activity.

Manual ventilation with an Ambu bag

An Ambu bag is a self-inflating, hand-held device used to deliver breaths. It can be used to give breaths to someone who is dependent on a ventilator that is not in use. It also is used 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/minute.
- Disconnect the ventilator tubing from the trach and attach the bag to the trach.
- Squeeze the bag as the person breathes in and allow it to self-inflate to let the person breathe out.
- Give 10 to 12 breaths per minute or every 5 or 6 seconds. If the patient 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 needs to be suctioned when:

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

How to suction a trach:

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 and attach the bag to the trach.
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, as far as it will go without using suction.
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 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 provider 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 fabric ties are used, 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 provider if you notice any of these around the stoma:

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

Inner cannula care

The inner cannula should be cleaned 2 or 3 times a day. It is best to clean it when the trach sponge is changed.

1. Clean the work surface and gather these supplies:
 - Temporary inner cannula (if needed)
 - Hydrogen peroxide in container
 - Sterile saline in container
 - Small cannula brush
 - Pipe cleaners
 - 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 not disposable, complete the following steps to clean it:
 - Place the inner cannula in container filled with hydrogen peroxide.
 - Quickly insert the temporary inner cannula (if needed), and lock the cannula in place. Attach the ventilator tubing back to the trach.

- 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.
 - Disconnect the ventilator, if applicable.
 - 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. Clean the temporary inner cannula 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 tracheostomy tube. Inflating the cuff also helps prevent any food or fluid from going into the lungs. The person cannot make any sounds 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.” Deflate and inflate the cuff when the entire trach tube is changed or if the person is able to make sounds when the cuff should be inflated.

Minimal leak cuff inflation

1. Clean the work surface and gather these supplies:
 - 10-mL syringe
 - Equipment for suctioning
 - 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 occurs after 4 to 8 mL of air has been inserted.
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 provider's instructions for how often to change the entire trach tube. It also will need to be changed if the cuff is torn, the pilot balloon is cut or there is difficulty in 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:
 - Remove the inner cannula and put in the obturator.
 - Test the cuff for leaks. Insert 10 mL of air in the pilot balloon. Check that the cuff inflates and stays inflated.
 - Withdraw the air to deflate the cuff.
 - 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 and 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 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 provider if you notice any of these signs:

- **Trach site**

Signs of a trach site infection may include redness, swelling, pain, pus, drainage, streaks of blood and foul odor.

- **Lungs**

Signs of a lung infection may include blood-tinged, yellow or green secretions; thick, foul-smelling secretions; an increased amount of secretions; change in respiratory rate; increasing shortness of breath; increased coughing; wheezing and fever.

Emergency troubleshooting

Difficulty 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. The first sign of a mucus plug is usually difficulty breathing. If the person suddenly develops trouble breathing, ask them to take a deep breath and cough. If breathing trouble persists:

1. Check the inner cannula for a buildup of secretions or a mucus plug. Clean or change inner cannula if clogged.
2. Provide suction to remove the secretions.
3. **If the patient is still having trouble breathing, call 911 for emergency assistance.**

Then do the following:

- 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, do the Heimlich maneuver to dislodge a mucus plug. (You may need to do this with the tube out of the stoma).

Tracheostomy 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 is able to 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 attempt to suction.
- Clean or change the inner cannula to remove the blockage.

Call 911 for emergency help if the block persists and the person has difficulty breathing.

While waiting for 911 responders to arrive:

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

Cuff leak

Replace the whole trach. 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 _____