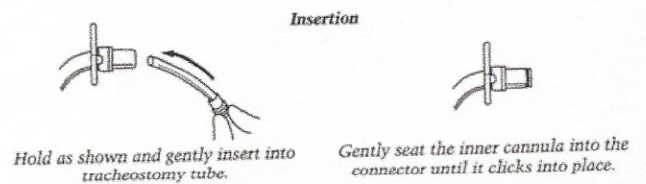
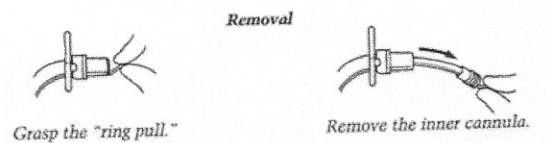
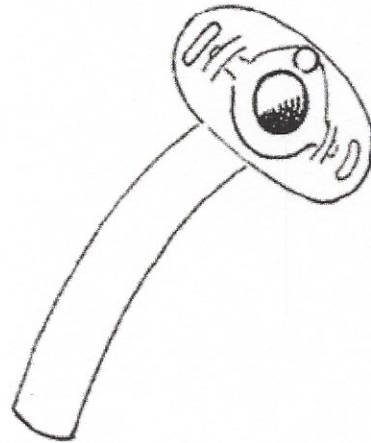


Parts of a Tracheostomy Tube:

- **Outer Cannula** - The outer cannula is the main body of the tracheostomy tube. It is held in place with a trach tube holder that fits around the patient's neck. Some trach tubes have a cuff on the end of them. This cuff is an inflatable balloon that seals against the tracheal wall when inflated. It helps to protect the airway from aspiration of oral secretions and prevents air from escaping through the mouth. Some patients do not require a cuff such as a patient who is not on a ventilator, patients who do not have swallowing issues and pediatric patients. Some outer cannulas have holes called fenestrations that allow airflow to escape and allow the patient to speak.
- **Inner Cannula** – Some trach tubes have inner cannulas. The inner cannula fits inside the outer cannula. It is important to remove the inner cannula and clean it to prevent mucus plugging and build up. The inner cannula locks into place to avoid removal.



Tracheostomy Care

It is important to keep the stoma and the trach tube clean. To do this trach care should be done at least twice a day and as needed. This includes cleaning the inner cannula, around the trach tube and the stoma. Cleaning the trach tube is done by using clean technique. The trach tube should be changed once a month. This is always done using a sterile technique.

Good hand washing technique is vital to prevent infections. You must always use gloves when dealing with trach tubes.

Tracheostomy Dressings:

Trach tubes have a dressing around them that is used to protect the skin.

The dressing should be changed when doing trach care or as needed.

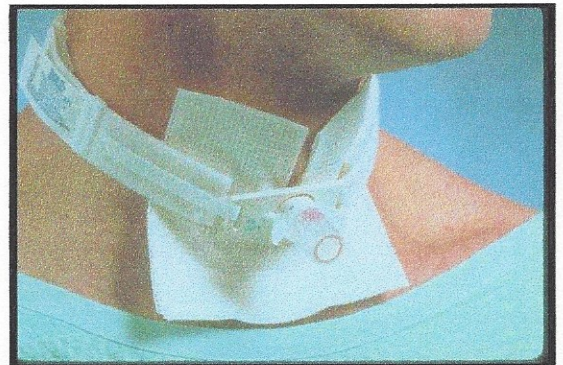
Trach dressings should not be moist or soiled.

Tracheostomy Tube Ties:

Tracheostomy tube ties are used to keep the trach tube in place to prevent accidental removal and to minimize movement of the trach tube. The ties should be changed daily with trach care or as needed. They should not be moist or soiled.

Equipment Needed:

Suction equipment
Dale trach holder



Procedure:

Wash your hands

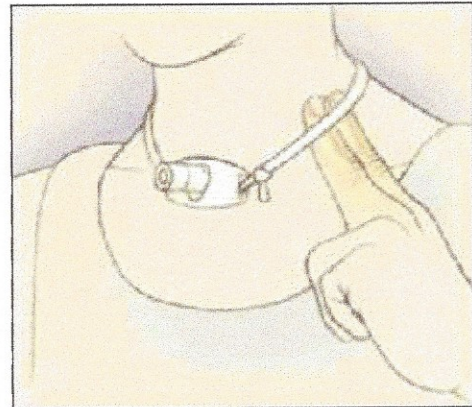
Take the old holder off while holding the tube in place .

Insert the end of the new holder into the slit on the side of the outer flange of the trach tube.

Place the other end in the other side.

Pull the sides so that they are tightly secure making sure to get two fingers under the holder.

Wash your hands

**Cleaning the Inner Cannula:**

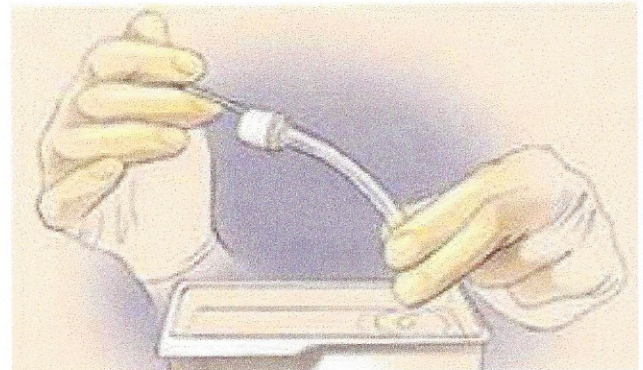
It is very important to keep the inner cannula of the trach tube clean and free from dried secretions. Dried secretions can occlude the trach tube and make it difficult for the patient to breathe.

To remove the inner cannula, turn the inner cannula counter clockwise, then remove it.

If the inner cannula has flange clips, pinch them and then remove the inner cannula.

The inner cannula should be changed at

least daily or as needed. It should be replaced with a clean new inner cannula or should be washed using sterile technique if using a non-disposable inner cannula.



Tracheostomy Care:

It is important to use sterile technique to minimize infection.

Equipment Needed:

- ~~Sterile~~ ^{Clean} tracheostomy cleaning kit which includes

- ~~Sterile~~ tray
- ~~Sterile~~ field
- ~~Sterile~~ brush
- ~~Sterile~~ 4x4 gauze pads
- ~~Sterile~~ pipe cleaners
- ~~Sterile~~ gloves
- ~~Sterile~~ dressing pads
- ~~Sterile~~ trach ties

- Clean inner cannula
- 3% Hydrogen peroxide
- Sterile water
- Sterile suction catheter
- Suction machine
- Ambu bag



CLEAN

Procedure:

1. Wash your hands
2. Open the cleaning kit and spread the ~~sterile~~ ^{clean} field out on to the work area.
3. Pour the hydrogen peroxide in one tray and the ~~sterile~~ ^{clean} water in the other side
4. Place the ~~sterile~~ ^{clean} glove on your dominant hand
5. Remove the items from the kit with the ~~sterile~~ ^{clean} gloved hand and put them on the ~~sterile~~ ^{clean} field
6. Suction the patient
- ~~7. Disconnect the patient from the vent with your non-sterile hand.~~

8. Unlock and remove the inner cannula with your non-sterile hand and place it in the tray with the hydrogen peroxide to soak. If using a non-disposable inner cannula. *or as ordered*
9. Insert a clean inner cannula into the trach tube and ~~reconnect the patient to the vent.~~
10. Use the sterile brush to clean the inner cannula with
11. Rinse the inner cannula with the sterile water
12. Use the sterile 4x4 to dry the inner cannula.
13. Store the clean inner cannula in a covered container
14. Suction the patient as needed
15. Remove the soiled trach dressing using the non-sterile hand
16. Clean the skin with a gauze pad moistened in the sterile water. Dry the skin with a sterile 4x4.
17. Apply a clean trach dressing and change the tube holder if needed.
18. Throw away all of the disposable supplies
19. Wash your hands



The Suction Machine:

Suction machines have a negative pressure when applied to the airway, the secretions can be removed. Each machine comes with a vacuum gauge. The recommended ranges are:

- Adults: -80 to -120mmHg
- Children: -80 to -100 mmHg
- Infants: -60 to -80 mmHg

There will also be a container for the secretions to accumulate in; a connection tube that attaches to the suction catheter; a short tube that connects to the machine pump, and a bacterial filter.



How to Use the Suction Machine:

1. Connect the short, clear plastic tubing between the canister and the suction machine.
2. Connect the long, clear plastic connecting tube to the connector that goes to the canister.
3. Plug the machine into a standard wall outlet.
4. Turn the machine on and occlude the end of the long connecting tube. Adjust the regulator setting according to the recommended values.
 - Clockwise – increases the suction
 - Counterclockwise – decreases the suction
5. Empty and clean the canister at least once a day, or whenever the fluid level reaches the full line. Flush the fluid down the toilet.
6. Before the canister is replaced, it should be washed with a mild, non-detergent soap such as Palmolive and water. Rinse well with hot water.



NOTE: It is important to always clean the suction canister after emptying the contents. This helps to prevent bacteria from contaminating the suction machine.

7. Clear the suction tubing by suctioning water up through the tubing.
8. The longer suction tubing should be thrown away monthly or whenever it can no longer be cleared adequately.

Portable Suction Units

Portable suction units are used for those patients who travel. It can also be used as a back-up system in case of power failure.

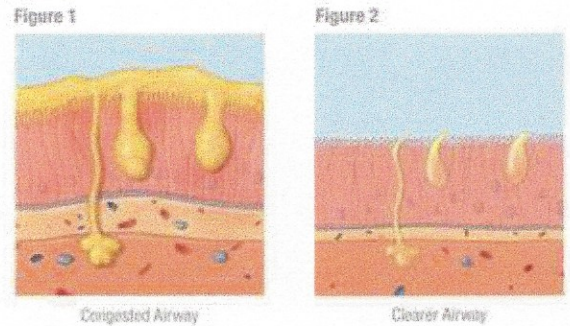
Instructions:

1. Turn the unit on by turning the switch to the ON position. The unit will be running on power from one of three sources:
 - Home electricity
 - Vehicle, cigarette lighter adapter
 - Units internal battery
2. The charging light will come on if the unit is plugged into a wall outlet.
3. The suction pressure can be adjusted by Turning the knob on the top of the side unit clockwise.
4. Empty and clean the canister at least once per day. The fluids should be flushed down the toilet.
5. The canister should be washed with a mild non-detergent soap and water and rinsed with warm water.



Suctioning:

Coughing is important to clear out secretions from the airway. Some patients with respiratory illness have weak coughs and have difficulty getting the secretions out of the airway. Secretions can obstruct the airway making it difficult for the lungs to get the oxygen they need. Suctioning removes the secretions from the airways which will allow the patient to breathe better. Suctioning can be done either by performing a sterile procedure or a clean procedure.



When a patient needs suctioned they will begin to breathe noisy, cough or if on a ventilator the high pressure alarm may be alarming. More experienced patients will request to be suctioned. Notify the physician if you notice an increase in sputum production or blood in the sputum.

Points to remember:

- Always wash your hands before and after suctioning the patient.
- Always wear gloves when suctioning
- Make sure to follow either the sterile or clean technique
- Discard used suction catheters
- Suctioning should only be done when necessary

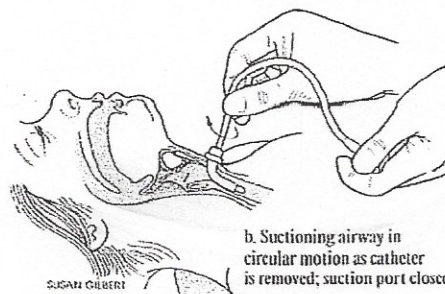
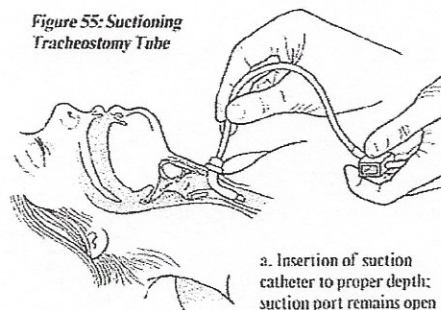
Clean Suction Procedure:

A clean suction technique utilizes clean gloves, but not sterile gloves each time the patient is suctioned.

Instructions:

1. Wash your hands before starting the procedure
2. Plug in the suction machine, connect the tubing to the suction canister.
3. Set the vacuum gauge to the proper suction pressure.
 - Adult: -80 to -120mmHg
 - Children: -80 to -100mmHg
 - Infants: -60 to -80mmHg
4. Put on clean gloves.
5. Attach a clean suction catheter to the suction tubing.
- ~~6. Connect the patient to an ambu bag and ventilate for 30 seconds~~
7. Gently insert the catheter into the trach tube ~~until resistance is met.~~ ^{prescribed length} Do ~~not~~ apply suction as you withdraw the catheter from the airway. Never suction longer than 10-15 seconds.
- ~~8. Reconnect the patient to the ambu bag and ventilate for 30 seconds.~~
9. Repeat suctioning until the airway is clear. *OR as MD has ordered*
10. You may clear the mouth and around the trach with the same catheter and glove if needed. It is important to remember you can not re-suction the trach until you replace the catheter with a new one.
- 11 ~~12~~. Rinse the catheter and suction connecting tube with distilled water until it is clear of mucus.
- 12 ~~13~~. Wash your hands

Figure 55: Suctioning Tracheostomy Tube



Infection Control:

It is important to keep infections from spreading to or from patients and caregivers. To prevent this from occurring it is important to use good handwashing techniques before and after having contact with blood, body fluids and after removing your gloves.

It is equally important to wear gloves when doing any procedure where the hands may come into contact with blood or body fluids.

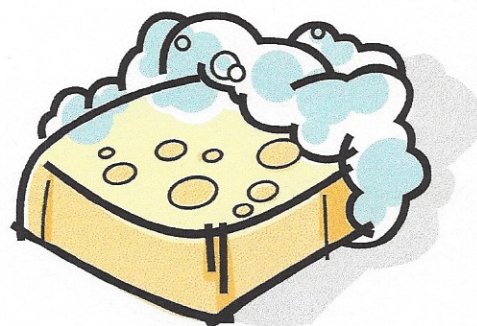
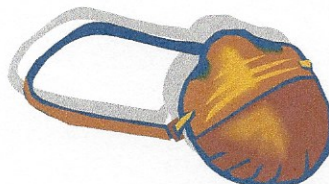
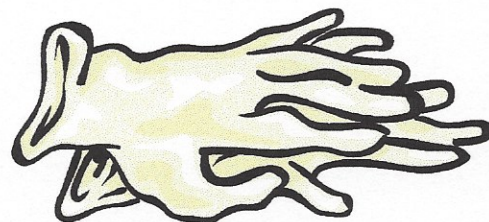
A mask should be worn if the patient has any communicable respiratory diseases.

Handwashing:

Good handwashing must be done with all procedures to prevent infections. Not doing proper handwashing technique is one of the most common sources of infections.

The following is proper procedure for washing hands:

1. Wet your hands with warm water
2. Use antibacterial soap
3. Wash your hands for 1-2 minutes making sure to wash with friction the back and palm of each hand and between all fingers.
4. Rinse your hands thoroughly under the running water
5. Dry hands well with a paper towel



Early Warning Signs

It is very important for you to know the signs and symptoms of infection or other problems.

Signs of Infection:

- Changes in sputum color, volume, odor and consistency

Causes of infection include not washing hands properly, using

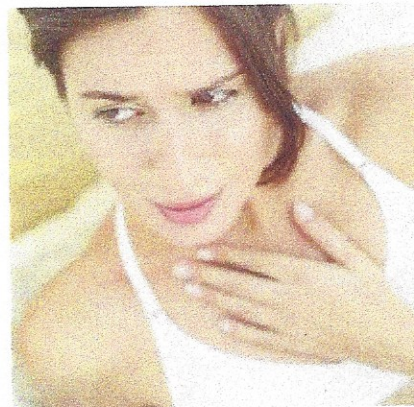
- Dirty equipment
- Improper suctioning
- Improper trach changes
- Improper stoma care

Breathing Symptoms:

- Increased shortness of breath
- Wheezing
- Increased coughing
- Increased respiratory rate
- Increased accessory muscle use

Sputum Changes:

- Color change (yellow, green, tan or brown)
- Increase in quantity
- Change in consistency
- Bloody



Stoma Symptoms:

- Pulsating tracheostomy tube
- Bleeding from the stoma
- Discharge or odor from the stoma
- Swelling or redness

Other Symptoms:

- Fever
- Loss of appetite
- Rapid weight gain
- Swelling of hands and feet
- Headaches
- Sleepiness
- Visual disturbances
- Dizziness
- Cyanosis
- Confusion or anxiety



Call Breath of Life with any equipment problems.

If you are having any physical problems contact your physician

If you are having severe physical problems call **911**

HOME NEBULIZER TREATMENTS

Many medications are most effective when inhaled directly into lungs. To be inhaled into the airways of the lungs, medication must be changed from a liquid to a fine mist. To create this fine mist at home, you need a nebulizer and an air compressor. A nebulizer is a plastic container that changes liquids into a fine mist using a jet of air. The compressor, runs by electricity or battery, provides the jet of air to the nebulizer.

How is the home nebulizer used?

1. Place the compressor on a hard surface. Make sure the filter is free of dust and dirt. If it is dirty, rinse it with water and then dry it. Plug in the compressor.
2. Place the prescribed amount of medication(s) into the nebulizer with a dropper or a syringe. Two medications can usually be mixed together. If you have any questions please contact your physician or Breath of Life.
3. Some asthma medicines come premixed with saline. Other medications need saline added. You can buy sterile normal saline in two ways: in unit dose plastic vials or a pressurized canister (Bronchosaline). Two squirts from the canister should be enough. Never put a homemade saline solution into a nebulizer.
4. Attach the nebulizer to the compressor tubing. Turn the power on. (The medication will immediately begin to nebulizer) Place the mouthpiece in the mouth and breathe in and out slowly through the mouth until the medication is gone. If the patient is able, tell them to take an extra deep breath every 10 breaths or so, hold that breath for 10 seconds, and then breathe out slowly. This technique permits the medication to stay in the lungs longer for better effect.

If the patient can't use a mouthpiece, use a mask. The mask can be secured loosely over the nose and mouth if needed. *A mask meant to fit over a tracheostomy may also attached to nebulizer tubing*

Most nebulizers must be held in an upright position to work well. If the mixture has coated the sides and isn't being nebulized, gently shake the nebulizer occasionally during the treatment. An average treatment takes 10-15 minutes. The treatment is over when all medication is gone and the nebulizer makes a constant sputtering noise.

Some patients cough up mucus after breathing treatments. Observe the mucus color and thickness. Normal secretions are usually thin and white or clear. Thick and sticky mucus that is yellow or green may indicate an infection. Call your physician to report a change.

If the patient needs more treatments than prescribed by your doctor, or if the treatments do not improve the symptoms, call your physician.

HUMIDIVENT OR “ARTIFICIAL NOSE”

Purpose: To provide humidification for the respiratory system, to assist in keeping secretions manageable, and to prevent airway damage due to dryness.

When to use a humidivent: When the patient is disconnected from bedside, water humidity source.

How to use: The humidivent is placed between the trach tube under the patient’s chin and the ventilator tubing attachment. If the patient has a trach, but not a ventilator, the humidivent sits directly on the trach opening.

How it works: There is moisture in our exhaled air. The tiny, rolled fiber inside the humidivent collects the moisture from the patients exhaled air, holds it in the paper, and uses that moisture to humidify the next breath taken in.

NOTE: The humidivent helps add moisture to each inhaled breath, but doesn’t do as thorough of a job as the heated humidifier used at the patients bedside. IF the patient will be away from the bedside humidification system for several hours, or the air is particularly dry, it may be helpful to place three or four drops of normal saline on the rolled fiber areas of the humidivent.

REMEMBER: The humidivent is disposable and is not to be cleaned. For infection control purposes, it would be wise to discard the used humidivent daily. If the inside of the humidivent is saturated with secretions, discard it and use a new humidivent.

