



# PEDIATRIC HOMECARE HANDBOOK

**Shiley™ Tracheostomy Tubes**

**Medtronic**  
Further, Together

## Read before using this homecare handbook

This handbook is intended to serve as a reference guide for the use and care of Shiley™ tracheostomy tubes from Medtronic only and should not replace hospital policies or doctors' orders.

Use of these guidelines with other tracheostomy products is not recommended. This handbook is provided as a supplemental resource only and is not intended as a complete text. You should always follow your doctor's or hospital's directions if they differ from those found here.

**Warning:** Shiley™ tracheostomy tubes are sterile if not opened, damaged, or broken.

Do not resterilize Shiley™ tracheostomy tubes.

**Note:** Federal law restricts the sale of Shiley™ tracheostomy tubes to, or on the order of, a doctor.

### Disclaimer

For detailed instructions, specifications, warnings, and additional information on Medtronic's Shiley™ tracheostomy tubes mentioned in this handbook, please refer to the IFU document provided with the product.

## What's Inside

This booklet provides information on how to care for your tracheostomy (trach) tube. You will find tips on how to suction, change ties, change tubes, and care for the skin around the opening in your neck. Also included are basic safety tips, a problem-solving guide, and an easy-to-understand glossary of the technical terms you may hear.

## Review safety tips and notes

On page 7, and throughout this guide, are several safety tips and notes designed to warn about conditions that could harmfully affect you. There are others that warn about situations that could damage your Shiley™ trach tube. Take a moment to review these tips and notes before you begin your trach tube homecare.

## Important phone numbers

Doctor \_\_\_\_\_

Homecare provider \_\_\_\_\_

Homecare supplier \_\_\_\_\_

Emergency \_\_\_\_\_

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# You Can Do It

## What you will need

- Basin (to check cuff on tube)
- Blanket (to swaddle child)
- Blunt-nose bandage scissors (to cut the twill tape)
- Box of facial tissues
- Bulb syringe
- Cotton swabs (used to clean around the opening)
- Disposable gloves
- Humidifier (to moisten the air during naps and at night)
- Hydrogen peroxide and water (mixed half and half, for cleaning around the opening)
- Nebulizer (to moisten the lungs)
- Replacement trachtube (same size and one smaller)
- Resuscitation bag (optional)
- Distilled water
- Suction catheter
- Suction machine (plug in and portable)
- Oxygen tank with resuscitation bag (if needed)
- Towel or small blanket (to roll up and place under your child's shoulders during tracheostomy care)
- Trach tube mask
- Twill tape or other trach tube holder (to hold the tube in place)
- Water-based lubricant

This handbook was created to answer parents' common questions as they learn how to care for their child's trach.

You will receive training for trach care from your local hospital or doctor's office. Practice makes perfect. The more time you spend, the more comfortable you'll be at caring for your child.

It is a good idea for several family members to take the training so that they also know how to care for your child's trach.

Your doctor, nurse, or therapist are your best sources for advice. But this guide will provide helpful tips and reminders so that things can go smoothly once you and your child return home.



**Note:** Some items come from your home healthcare supplier; others you will need to buy at the store.

# How the Tracheostomy Works

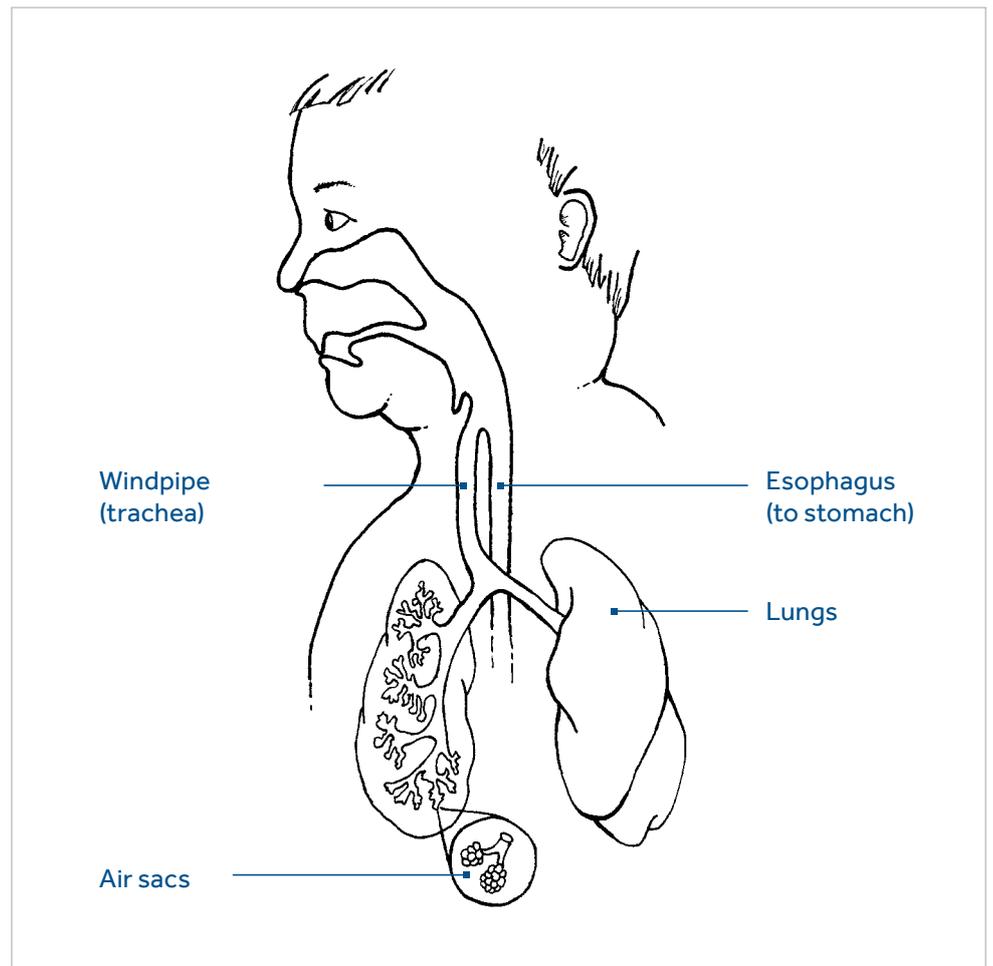
## What the Doctor Does

The doctor makes a small opening (stoma) through the skin and tissue of the neck into the wind pipe (trachea). He or she then places a curved plastic tube (trach tube) into this opening. Your child breathes directly through the tube, instead of through the mouth and nose.<sup>1,2</sup>

## What's Happening Inside

Normally, we breathe through the nose and mouth so that air is filtered, warmed, and moistened before it goes into the lungs.

With a trach, air goes directly into the windpipe to the lungs through the trach tube. There's no filtering, warming, or moistening. You will learn how to make up for this by using the proper equipment and the proper trach care.



## Humidification

Normally air goes through the nose and mouth where it is filtered, warmed, and moistened. This protects the lining of the lungs and keeps the mucus from drying.

A trach bypasses the nose and mouth. So, we need to add moisture, even in damp climates, or mucus will dry and block the trach tube. This is why a humidification system with flex tube and trach mask is often used. Another way to humidify is to use an "artificial nose." This device traps warmth and moisture when the child breathes out and then puts that moisture back in the air when she breathes in.

Be sure to use a humidifier during naps and at night to reduce the chance of mucus plugging the trach tube, even if your child wears an artificial nose while awake.<sup>1,2</sup>

### **Weaning from the Humidifier**

During the day (and only during the day) you can let your child go without humidity for longer periods of time. Do this gradually.

Start with one hour. Watch for thick mucus, or mucus with traces of blood in it. If you find either, then give her plenty of liquids to keep the mucus thin. Notify your doctor.

If the trach tube plugs up, suction it to remove the mucus plug (see page 9). If you can't remove the mucus plug, change the tube.<sup>1,2</sup>

## Tips for Daily Living



### Mealtime

Your child will be able to eat just like other children. You just need to be careful so foods and fluids “don’t go down the wrong way.”

When bottle-feeding an infant, don’t prop the bottle or feed the child while she is lying down. Liquid can get into the lungs this way. Hold the infant in a nearly upright position during feeding. Lay the infant on her side after eating. This way if vomiting occurs, there is less risk of the child getting it in his lungs and choking.

Watch toddlers during meals so they don’t get food in the trach tube. You may wish to loosely cover the trach tube opening with the mask of the humidification system or with an artificial nose for extra safety.

### Bath Time

Children love to take baths. Your child will too, with you watching over him.

Always prepare a shallow bath. Use care to prevent bath water from getting in the trach tube because it goes directly to the lungs. For extra safety, attach a trach mask or an artificial nose to the front of the trach tube.

When it’s time to shampoo, you may want to do it with the child lying on his back, with his head over the sink, instead of shampooing in the bathtub.

### Getting Dressed

You can dress up your child almost anyway you wish. Just be careful the clothing does not block the trach tube.

Avoid: Crew necks, turtlenecks, buttons in back, necklaces, shoulder straps, and clothes that shed fibers or lint.

Use: V-neck tops and clothing that buttons in the front. Cotton bibs are preferred over plastic ones.

## Tips for Daily Living (continued)

### Playtime

Toddlers can enjoy most normal kinds of play, but they must be supervised. Also, you will want to select toys carefully.

**Avoid:** Small toys or toy parts that could fit into the trach tube. Also stay away from sandboxes and contact sports.

In cold or dusty weather, use a loose scarf, mask, or artificial nose over the trach tube to warm the air and keep dust out of the trach tube.

### Illness

While no one likes to be ill, it can be especially challenging for trach patients. Preventing illness is best, so make sure your child eats healthy foods. Practice good hand washing. Also keep your child up to date on all shots and vaccines and keep him away from others who are sick.

If illness occurs, keep a close eye on your child. If your child is vomiting, has diarrhea or a fever, you may have to suction more frequently and give the child more fluids. Also, if vomiting occurs, loosely cover the trach tube with an artificial nose, bib, or scarf to keep vomit out. If you think vomit may have entered the trach tube, suction immediately. If you see bits of food, call your doctor immediately.<sup>1,2</sup>

### Getting Away

Taking care of a child with a trach can require much of your time. Be sure to plan extra time for yourself and your family.

If you are going out, you must use a babysitter trained in trach care. It is a good idea to train a grandparent or other family member or a neighbor. Some parents swap babysitting with other parents whose children have trach tubes.

## Safety Tips

### If your child uses a ventilator

Routinely check the ventilator safety and auditory alarms to be sure they are working properly.

Be sure the ventilator tubes are properly placed so that they don't pull on the trach tube.

Don't twist or pull on the trach connector any more than you must. This may cause discomfort to your child or disconnect the ventilator tubes.

Grasp the trach tube to hold it in place when connecting or disconnecting the ventilator or humidification tubing.<sup>1,2</sup>

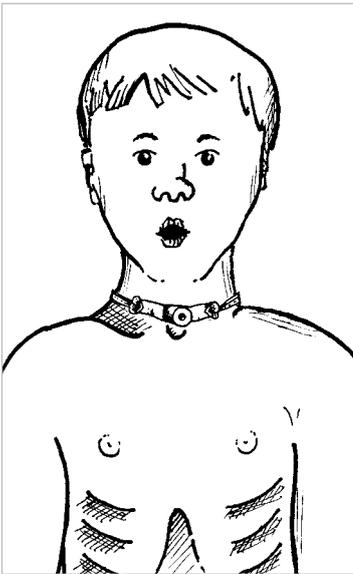


- Follow your doctor's or hospital's directions for care. If instructions in this guide are different from your training, follow your training.
- Only people who have been trained by a doctor, nurse, or therapist should perform trach care.
- Always have extra trach tubes on hand for an emergency (same size and one smaller).
- Do not resterilize trach tubes.
- Do not put the trach tube any place where the temperature is over 120 F.
- Avoid overinflating the trach tube cuff. This can injure your child's windpipe.
- Watch for signs of infection. Notify your physician if you discover:
  - Red, inflamed skin at stoma
  - Foul-smelling mucus
  - Bright red blood in mucus
- Take only a few seconds to suction. Take a short break before you suction again.
- Use care when bathing your child.
  - Use shallow water
  - Use the trach mask
- Keep the trach tube loosely covered during feeding.
- Supervise meals to keep food out of the trach tube.
- Position infants on their side after eating in case they vomit.
- Don't use perfumes, powders, or aerosol sprays around your child.
- Keep your child away from dust and mold.
- Don't smoke around your child.
- Keep clothing away from the trach tube, except for a protective scarf.
- Encourage play, but avoid:
  - Sandboxes
  - Tiny toys
- Supervise play at all times, especially with other children.
- Learn CPR.
  - You will be taught CPR in the hospital
  - All caregivers must know CPR
- Post CPR instructions near bedside.
- Post emergency numbers near phone.

# Suctioning

## What you will need

- Suction machine
- Collection jar for secretions
- Suction catheter
- Sterile water
- Resuscitation bag (optional)
- Gloves
- Oxygen tank (if needed)



The lungs and windpipe are meant to produce mucus. The mucus cleans the air as we breathe by trapping small particles. It then moves up the windpipe until it can be swallowed.

Mucus can collect in and around the trach tube. It must be removed so it doesn't dry and block the tube.

Suctioning should be done only as needed, usually upon waking, before meals (if needed), at naptime, and before bed. Do not suction too frequently. The more you suction, the more secretions can be produced.

As your child grows older, you may need to suction less often. But you will still want to assess the need for suctioning at least twice a day.

The following signs are indications that your child may need immediate suctioning:

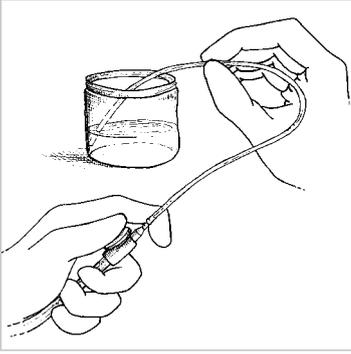
- Increased gurgling, bubbling, or coughing
- Anxious or restless, crying
- Flaring nostrils
- Mouth, lips, and fingernails may be pale, blue, or dusky color
- Difficulty eating
- Skin under breast bone and between ribs pulls in
- Can't cough out secretions

Discuss with your physician anytime your child experiences signs that require immediate suctioning.

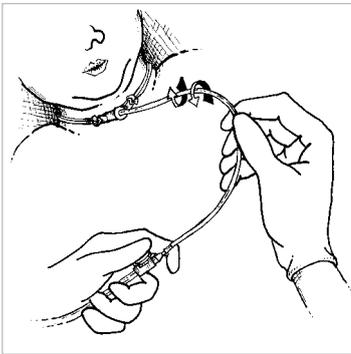


**Note:** Always follow your doctor or hospital's directions if they differ from the directions in this guide.

## How to Suction



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1. Wash hands.
2. Take off mist collar or artificial nose if needed.
3. Put on a disposable glove. Use the gloved hand when touching suction end of catheter.
4. Attach catheter to machine. Turn on the suction machine.
5. Rinse catheter by suctioning sterile water.
6. Gently insert catheter into trach tube until it reaches the end of tube. (You will be taught in the hospital about trach tube length.)
7. Cover the thumb hole on the catheter to suction.
8. Gently remove the catheter as you roll it between your thumb and forefinger. (The complete pass should take about 2-3 seconds.)
9. If you need to suction again, rinse the catheter first.
10. If your child is on oxygen or other supports for her breathing (like a ventilator), giving a few extra breaths with an Ambu bag during or after suctioning is important. Your child's nurse or doctor will advise you on this.
11. Rinse the catheter with tap water and wipe the outside with alcohol. After air drying, store it in a clean, dry place. Wash your hands when your equipment has been put away.
12. Look at the mucus:
  - Normal: Clear with no odor.
  - Infection: Yellow or green color with a foul-smelling odor.
  - Blood: A few streaks of blood is OK. But if it has more bright red or old dark blood, there could be a problem.
13. If you see signs of infection, or bright red blood, call your doctor. Follow the instructions of your hospital or home health provider for storage or disposal of catheters.  
  
Keep the suction machine, tubing, and collection jar clean according to the home health supplier's instructions.<sup>1-4</sup>

# Changing the Ties

## What you will need

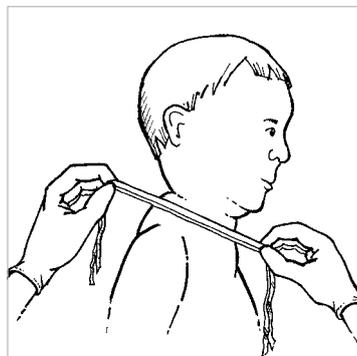
- Trach twill tape or other trach tube holder
- Blunt-nose bandage scissors
- Towel or small blanket, rolled and placed under the child's shoulders
- Disposable gloves (optional) depending on institution or doctor preference

It is important to keep the area around the opening in the neck clean to help prevent infection. So change ties whenever they become wet, soiled, or loose, but change ties at least daily.

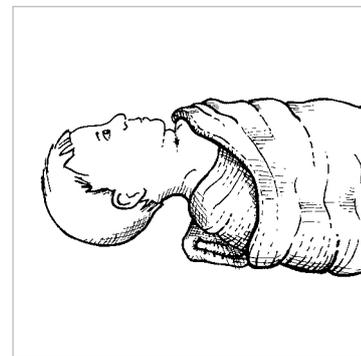
You will be using scissors close to the face. So you'll need to hold your child still. This job is easier with two people. But it can be done by one, if need be.

## How to Change Twill Tape Ties

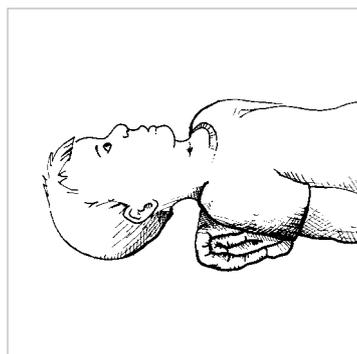
1. Wash hands. (Both people, if two are involved.)
2. Suction before changing ties. Suctioning decreases chances of the child coughing while ties are off. Movement of the tube often causes the child to cough and bring up mucus.
3. Cut two lengths of twill tape, each long enough to fold in half and still reach around the child's neck. Set these nearby.
4. One person holds the child; the other changes the ties. If you are doing this alone, swaddle the child securely in a blanket to restrain the hands.
5. Place a rolled towel or blanket under the child's shoulders.
6. Leave the old ties in place. Thread the folded end of one of the new ties through one of the holes on the trach tube, under the old ones, going from the skin side, out toward you.



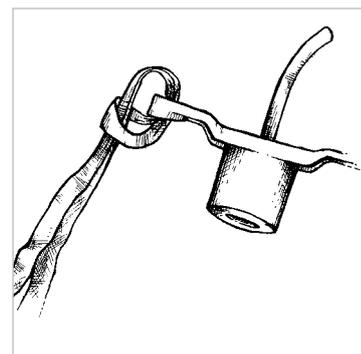
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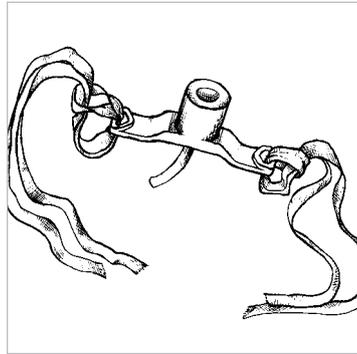
## Changing the Ties (continued)

7. Pull the tie through, until it forms a loop. Draw the other ends through the loop until the tie is secured to the trach tube.
8. Repeat steps 5 and 6 for the other tie.
9. Bring the loose ends of both ties around to the back of the neck and tie them together using a square knot. (Don't use a bow.)

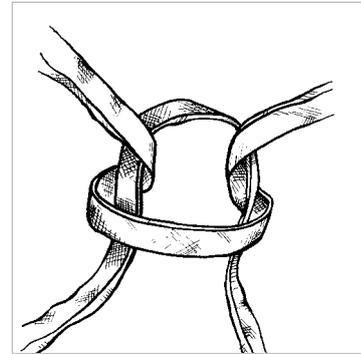
Note: Change the location of the knot from side to side and in the back of the neck to prevent skin irritation.

10. Cut the ends of the ties leaving only 1 to 2 inches.
11. Carefully cut and remove soiled ties.<sup>1,2,4</sup>

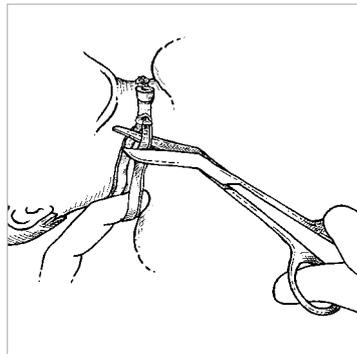
Note: You know the ties are pulled tight enough when you can fit the tip of your little finger snugly between the neck and the tie.



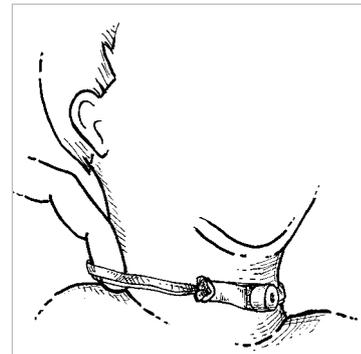
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# Changing the Tracheostomy Tube

## What you will need

- Replacement tube (with ties already attached)
- Smaller size trach tube (in case of need)
- Blunt-nose bandage scissors
- Towel or blanket to roll under the child's shoulders
- Water-based lubricant
- Oxygen tank with Ambu bag attached
- A helper or a blanket to swaddle the child in

Frequent and routine changes of the trach tube and accessories are recommended. This helps to prevent gradual mucus build-up, which can clog or block the tube. Your doctor will advise you how often to change the tube.

Note: Changing the tube may upset the child and cause coughing, which can lead to vomiting following insertion. That's why it is best to change a tube before a meal or at least 1½ hours after eating.

## Cleaning the Tracheostomy Tube

Review the specific instructions per the instructions for use (IFU) that is included in the tracheostomy package.

## Caution

Shiley™ trach tubes are designed for single-patient use only.

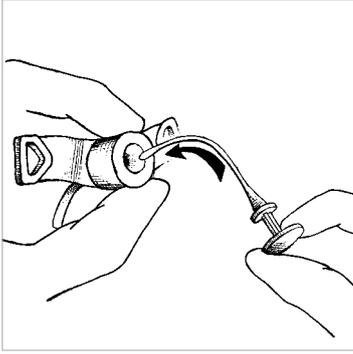
Note: Always follow your doctor's or hospital's directions if they differ from the directions in this guide.



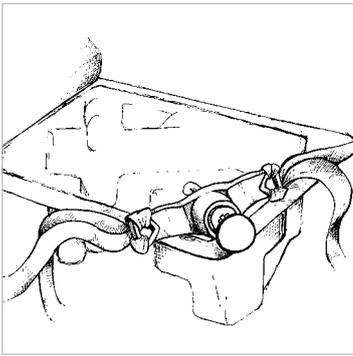
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**Note:** You probably won't have trouble inserting the new tube. But if you do, be sure the child's head is tilted back. If you are still having difficulty, spread the skin around the stoma and insert the tube while the child is breathing in. Try a smaller size. Call your doctor immediately if you have any problems.

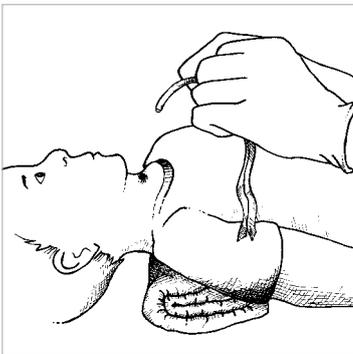
## How to Change an Uncuffed Tube



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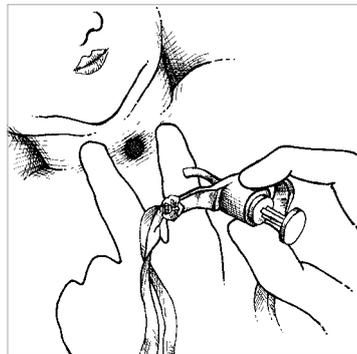


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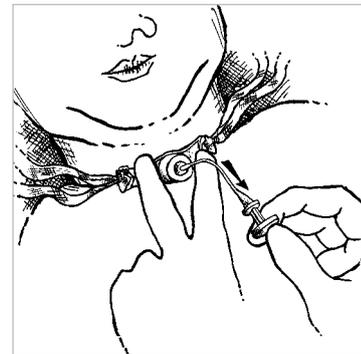


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1. Be sure all involved wash their hands. Put on clean gloves.
2. Suction child before changing trach tube.
3. Insert obturator into new trach tube.
4. Attach ties as shown in "How To Change Twill Tape Ties" on page 10. (Do this before putting the tube in your child's neck.) Place tube with ties attached in the opened package nearby.
5. Place rolled towel or blanket under the child's shoulders.
6. Have your partner restrain the child's arms while you cut the ties and remove the tube. (If no partner, swaddle the child securely.)
7. Cut old ties.
8. Remove the old tube. With one hand using an up-and-out motion (follow the angle of the tube). Don't be alarmed if secretions are coming out of the stoma when the trach is out.
9. Gently insert the new tube, pushing back, then down, in an arcing motion.
10. Immediately remove the obturator as you hold the tube in place with your finger.
11. Fasten the ties using a square knot.
12. Throw away the old tube and ties.<sup>1-4</sup>

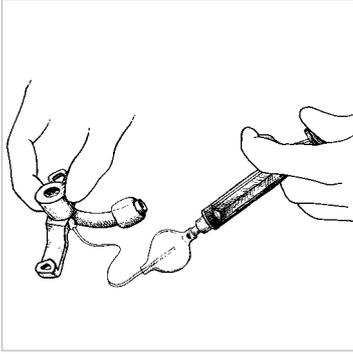


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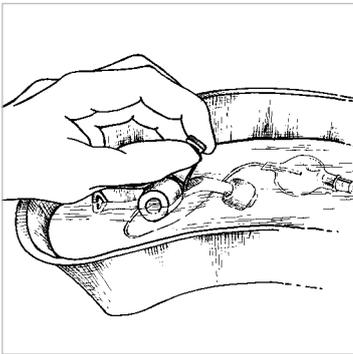


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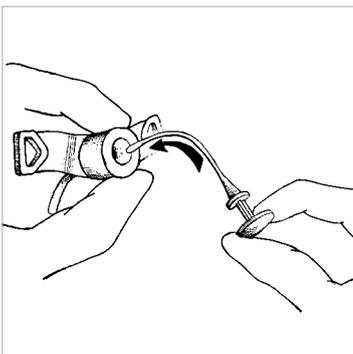
## How to Change a Cuffed Tube



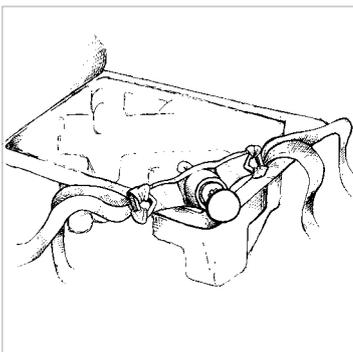
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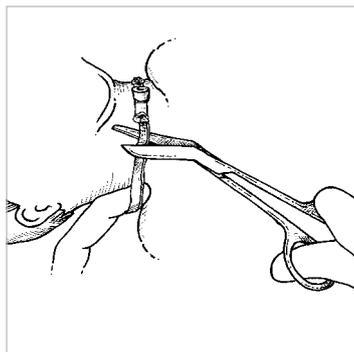


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1. Be sure all involved wash their hands.
2. Remove the new tube from the package. Take care to avoid damaging the cuff, inflation line, or pilot balloon in any way.
3. Use a syringe to inflate the cuff to the proper leak test volume. The markings on the syringe show air volume.

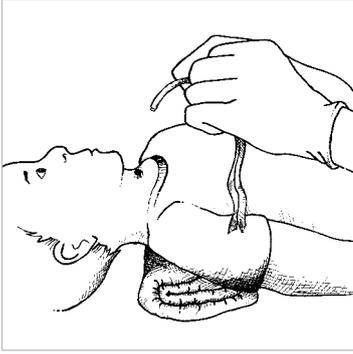
Shiley™ Tube Size	Test Volume
2.5 NCF to 3.5 NCF	1.0 cc
4.0 NCF to 4.5 NFC	1.5 cc
2.5 PCF to 3.5 PCF	1.0 cc
4.0 PCF to 4.5 PCF	1.5 cc
5.0 PCF, 5.0 PLCF	2.0 cc
5.5 PCF, 5.5 PLCF	3.0 cc
6.0 PLCF	3.5 cc

4. Place entire tube, including inflation line, in a basin with enough distilled water to cover it and watch for bubbles indicating an air leak.  
Note: If you see any leaks, do not use the tube.
5. Deflate the cuff completely using a syringe. As you are doing this, gently push the cuff away from the end of the tube. Be sure to remove all air. This makes it easier to insert the tube.
6. Attach ties as shown in "How To Change Twill Tape Ties," on page 10, and insert the obturator. (Do this before inserting the tube.)
7. Then place the tube with ties attached in the opened package nearby.
8. Place a rolled towel or blanket under the child's shoulders.
9. Have your partner restrain the child's arms while you cut the ties and remove the old tube. If no partner, swaddle the child securely. If necessary, suction accumulated secretions above the cuff prior to deflating.



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## How to Change a Cuffed Tube (continued)

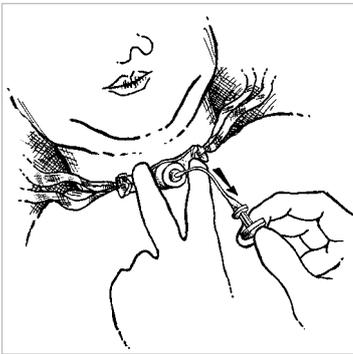


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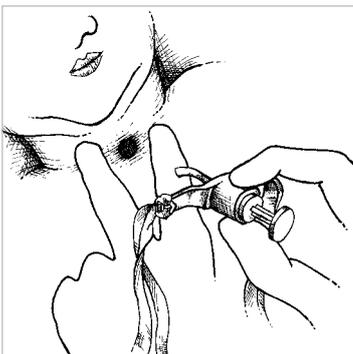
10. Gently insert the new tube, pushing back, then down in an arcing motion.
11. Immediately remove the obturator, as you hold the tube in place with your fingers.
12. Continue to hold the new tube in place while your partner fastens the ties using a square knot.
13. Inflate the cuff to the proper volume using a syringe. (Your doctor will tell you what volume to use.)

Note: Care must be taken to place the air line and pilot balloon so that they do not become damaged during the child's normal activities.

14. Throw away the old tube and ties.<sup>1,2,4</sup>



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**Note:** You probably won't have trouble inserting the new tube. But if you do, be sure the child's head is tilted back. If you are still having difficulty, spread the skin on the stoma and insert the tube while the child is breathing in. Call your doctor immediately if you have any problems.

**Note:** Always follow your doctor's or hospital's directions if they differ from the directions in this guide.

## Cleaning Around the Opening

### What you will need

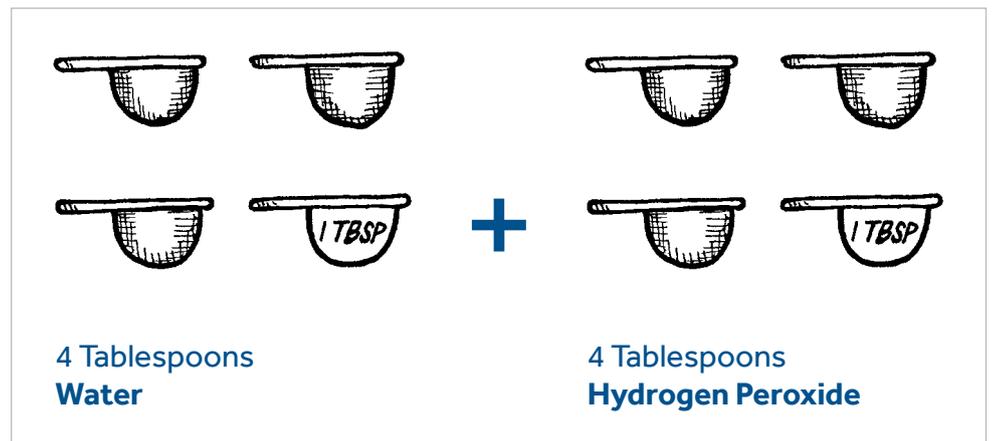
- Water and hydrogen peroxide, mixed half and half
- Cotton swab
- Towel or small blanket, rolled up

Skin care should be done at least twice a day: once in the morning and once at night. If you smell an odor around the neck or opening, clean the area every 8 hours until the odor is gone.

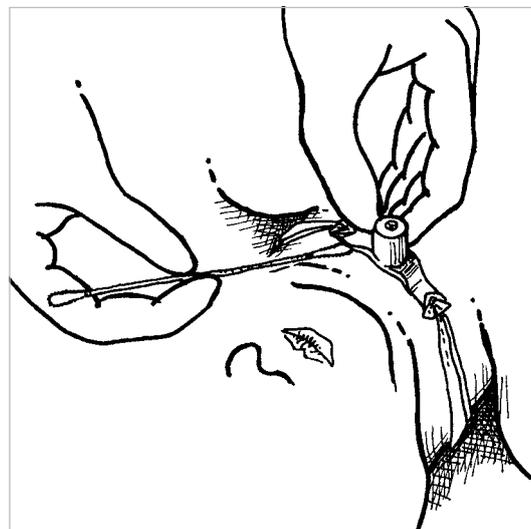
In between skin-care time, keep the neck and area around the opening clean and dry. Do not use powders or lotions. The child could breathe them into the lungs. Watch for red, irritated areas. If excessive redness or pimples occur around the opening, call your doctor, reduce humidity, and use only sterile water for cleaning. If your doctor orders an ointment, spread it on according to his instructions.<sup>1-3</sup>

## How to Clean Around the Opening

1. Wash your hands.
2. Mix 4 tablespoons of hydrogen peroxide solution with 4 tablespoons of water as shown below. Empty the solutions into a clean basin or container.
3. Place rolled up towel or blanket under your child's shoulders to expose the stoma area.
4. Dip a cotton swab into the hydrogen peroxide and water mixture.
5. Roll the cotton swab between the trach tube and the skin around the opening. Clean from the stoma outward. This removes wet or dried mucus.
6. Repeat steps 4 and 5, using a fresh cotton swab each time, until entire area around opening is clean.
7. Rinse the area using clean cotton swab, dipped in clean water only. Then let it air dry.



2



7

# Leaving Home

## What you will need

- Spare trach tubes (with obturators and ties, same size and one smaller)
- Blunt scissors
- Portable suctioning device with suction catheter
- Distilled water
- Tissues
- Bulb syringe
- Breathing medications (if child uses)
- Manual resuscitation bag (if ordered)

Your child doesn't have to be stuck in the house. You may take him with you shopping, to the park, or on visits to friends and family. Whenever you go out, prepare a travel kit.

## If It's Cold Out

If it's below freezing outside, don't let your child breathe cold air directly through the trach tube. This can be bad for his windpipe and cause problems.

Use a scarf, kerchief, or single layer of gauze tied loosely around the neck. If you have an artificial nose, use that. These things warm the air as the child breathes in. They also are good ways to keep dust and dirt out on dusty or windy days.<sup>1,2</sup>

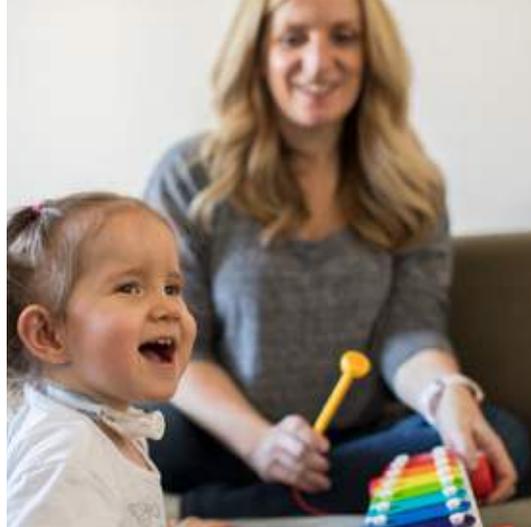
## Going to School

If your child is school age, he may attend. But it's important to contact the school nurse to make special arrangements ahead of time, so that the school can provide the proper care.

## Going Out to Play

Your child can play with other children. But you should supervise the play. Contact sports or rough games are not a good idea for children with tracheostomies. Do not let your child play in pools, sandboxes, or areas where small particles could get inside the trach tube.<sup>1,2</sup>

## Learning to Speak



At first your child may not be able to make a sound. Don't worry. As swelling decreases, she may begin to make sounds. In the meantime, watch her face. She can tell you a lot with her looks.

How much sound your child is able to make depends on her age, the trach tube, her breathing patterns, etc. Some children can produce sound around the tube. Others may use things called speaking valves that help control the airflow so they can speak.

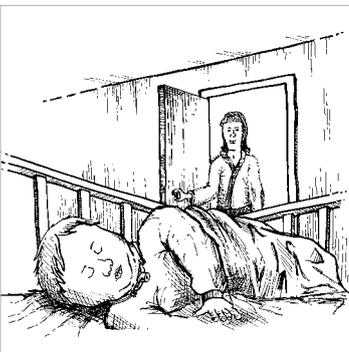
Your child will need special care so that she will be able to speak properly as she grows. Be sure to show her things. Say their names. Read to her. Point to pictures and say what they are. Talk to her. Tell her what you are doing.

At nine months, children can learn sign language. If you sign to your child, always say the words out loud while you sign.

For additional information about your child's speech, consult your doctor or speech pathologist.

### **How Do I Know If My Infant Needs Me?**

Any nonspeaking child, especially if he is less than a year old, should be closely monitored. If you are worried that you won't know when your infant needs you, let your baby sleep in the same room with you, but not in the same bed. Better yet, put an intercom in your child's room. Always check on your child frequently during the day.



## Glossary



**Artificial airway (ar-teh-fish-all air-way)** - Another word for tracheostomy tube.

**Artificial nose (ar-teh-fish-all noz)** - Also called HME (heat and moisture exchanger). A device that warms and moistens the air your child breathes in.

**Bacteria (back-teh-ree-ah)** - Germs.

**CPR Cardiopulmonary resuscitation** - A method for getting someone to breath again once they have stopped breathing or to get the heart to pump again if it has become ineffective.

**Cannula (can-you-la)** - The tube part of the tracheostomy tube.

**Cartilage (car-till-age)** - The tough tissue rings the windpipe is made of.

**Cuff** - The inflatable balloon on some tracheostomy tubes.

**Diaphragm (die-ah-fragm)** - The big muscle below the lungs that controls breathing.

**Encrustation (in-cruss-ta-shun)** - Hard, crusty, dried mucus. Exhale (x-hale) Breathe out.

**Expiration (x-pire-a-shun)** - Breathe out.

**Health care provider** - Nurses, nurse practitioners, doctors, respiratory therapists, speech pathologists or others that visit your home.

**Health care supplier** - The company where you get special medical equipment.

**Inhale (in-hale)** - Breathe in.

**Inspiration (in-pire-a-shun)** - Breathe in.

**Lumen (loo-men)** - Inside part of the tube, where the air goes in and out.

**Mucus (mu-kuss)** - Slippery fluid that's produced in the lungs and windpipe. This dries and sticks to any surface and forms a crust.

**Nebulizer (neb-you'll-eyes-er)** - A machine that puts moisture and/or medicine directly into the lungs.

**Obturator (ob-tur-a-tor)** - The semi-rigid stick you put into the tracheostomy tube to help guide it into the opening in the neck.

## Glossary (continued)



**Phonation (fo-nay-shun)** - Talking or making sounds with the vocal cords.

**Pliable (ply-ah-bull)** - Soft, flexible.

**Saline (say-leen)** - Solution similar to water found in the body.

**Secretions (see-kree-shuns)** - Another word for mucus.

**Speaking valve (spee-king valv)** - A one-way valve that lets air come in through the tracheostomy tube, but then sends it out past the vocal cords and mouth to make talking possible.

**Speech pathologist (speech path-ol-o-gist)** - A person trained to help people with speaking and swallowing problems.

**Stoma (sto-ma)** - The actual opening in your neck where you insert the tracheostomy tube.

**Sterile (steer-ill)** - Free from germs.

**Suctioning (suck-shun-ing)** - Vacuuming up mucus in the tracheostomy tube.

**Swaddle (swah-del)** - To wrap a baby like a mummy with only his head sticking out.

**Syringe (seer-enj)** - The plastic device with a plunger that you use to inflate the cuff.

**Trachea (tray-key-ah)** - The windpipe.

**Tracheostomy (tray-key-oss-tuh-mee)** - The opening in your neck where your tracheostomy tube goes, to make breathing easier.

**Tracheotomy (tray-key-ot-o-mee)** - The operation where a doctor makes an opening in your neck for a tracheostomy tube to make breathing easier.

**Trach mask (trake mask)** - A device that fits on the end of the trach tube to provide moisture.

**Trach tube (trake toob)** - Short for tracheostomy tube. This is the tube the doctor puts in the opening in your child's neck.

**Ventilator (vin-till-a-tor)** - A machine that helps a person breathe through a trach tube by mechanically inflating the lungs.

**Vocal cords (vo-cal cords)** - Two strips of tissue in the voice box in the neck that vibrate to make sounds when we talk.

## Shiley™ Uncuffed Tubes



1. Connector: The part of the tube that sticks out of the neck.
2. Cannula: Another name for the tube part of the tracheostomy tube.
3. Neck Plate: This is where the ties are attached to hold the tracheostomy tube in place.
4. Size and style of the trach tube.
5. Size of the opening on the trach tube.
6. Size of the outside of the trach tube.
7. Obturator: This is used to help guide the tube during insertion.

## Shiley™ Cuffed Tubes



1. Connector: The part of the tube that sticks out of the neck.
2. Cannula: Another name for the tube part of the trach tube.
3. Neck Plate: This is where the ties are attached to hold the trach tube in place.
4. Size and style of the trach tube.
5. Size of the opening on the trach tube.
6. Size of the outside of the trach tube.
7. Cuff: Once the trach tube is in the neck, this is filled with air. It helps keep food, water, or vomit from getting into the lungs.
8. Inflation Line: Carries air to and from the cuff.
9. Pilot Balloon: If there is air in the cuff, this will be puffed up. If you have sucked all the air out of the cuff this will be flat.
10. Luer Valve: This is where you insert the tip of the syringe to put air in, or take air out, of the cuff.

## Solving Problems

Symptom	What May Have Happened	What To Do
<p>Your child:</p> <ul style="list-style-type: none"> <li>▪ Is restless</li> <li>▪ Is crying</li> <li>▪ Has a scared look on his face</li> <li>▪ Is making a bubbling or wheezing sound</li> <li>▪ Can't cough out mucus</li> <li>▪ Has a pale color or blue, dusky color around mouth and nose</li> <li>▪ Is flaring his nostrils</li> <li>▪ Is having trouble eating</li> <li>▪ Looks hollow in the neck</li> <li>▪ Has the skin on his chest sucked in</li> </ul>	<p>Build-up of mucus.</p>	<p>Suction. If symptoms remain after suctioning, call your doctor.</p>
<p>Yellow or green mucus, bad-smelling mucus, or bright red blood comes out when you suction.</p>	<p>Infection.</p>	<p>Call your doctor.</p>
<p>Tube comes out of the opening in the neck.</p>	<p>Pulling or weight at connector.</p>	<p>Hold the neck plate with one hand while removing ventilator tubing to reduce pulling. Move ventilator (if used) and tubing so it doesn't pull on the trach tube.</p>
	<p>Trach ties too loose or tied the wrong way.</p>	<p>Put the tube back into the opening and retie the trachties (refer to pages 10 and 11).</p>

## Solving Problems (continued)

Symptom	What May Have Happened	What To Do
Unable or difficult to pass suction catheter through trach tube.	Mucus plugging trach tube.	Change the trach tube.
	Catheter too large for tube size.	Contact your home healthcare supplier.
<p>When you change diapers you notice:</p> <ul style="list-style-type: none"> <li>Your child has stopped wetting or is wetting a lot less.</li> <li>Dark urine with a strong ammonia smell.</li> </ul>	Dehydration.	Call your doctor.
Tube, or any part of the tube, is broken or doesn't work.	Faulty trach.	Replace the tube.
	Trachtube was cleaned using improper cleaning agents.	Replace the tube. Always use only those cleaning agents recommended by the tube manufacturer.
	Pulling or weight at connector.	Hold the neck plate with one hand while removing ventilator tubing to reduce pulling. Move ventilator and tubing so it doesn't pull on the trach tube.

## Solving Problems (continued)

Symptom	What May Have Happened	What To Do
Ventilator's "High Pressure" alarm goes off.	Ventilator tubing is blocked or kinked.	Clear tubing of kink or blockage.
	Mucus is plugging the trach tube.	Suction to clear mucus.
	If the first two suggestions don't work, there may be a ventilator problem.	Contact home healthcare supplier.
Ventilator "Low Pressure" alarm goes off.	Ventilator tubing is not connected at machine.	Make sure all tubing to machine and patient is connected.
	If you have a cuffed trach tube: Leak in cuff, inflation line or pilot balloon.	Remove ventilator tubing from trachtube. Deflate and reinflate cuff with proper volume. Attach ventilator tubing. Turn on machine. Replace the tube if it will not remain inflated.
	If the first two suggestions don't work, there may be a ventilator problem.	Contact home ventilator healthcare supplier or your doctor. Deliver breaths with a manual resuscitation bag, if available.



**Note:** The following applies only to patients on ventilators.

## What if the Power Goes Out?

The best way to deal with this is to have a plan.

Before the power goes out, notify the power and phone companies, in writing, that your child uses a trach tube. Ask for priority in restoring service.

You may purchase a special light that goes on if the power goes off. Use this to alert you.

You may go to a friend's or family member's home. Also, you might go to a hospital or fire house where there will be an emergency generator.

### SAMPLE LETTER

Date

ABC Power Company  
Address line 1  
Address line 2

To Whom It May Concern:

Please provide priority service for my home in case of a power outage.

Our child, (Name and age) requires (Type of equipment) in order to breathe. Our doctor's name is:

(Doctor's name, address and phone)

If I am not available, please contact:

(Name of relative, friend or neighbor who can always reach you.)

Sincerely,





1. Sherman JM, Davis S, Albamonte-Petrick S, et al. Care of the child with a chronic tracheostomy. Official statement of the American Thoracic Society. *Am J Respir Crit Care Med.* 2000;161(1):297-308.
2. Mitchell RB, Hussey HM, Setzen G, et al. Clinical consensus statement: tracheostomy care. *Otolaryngol Head Neck Surg.* 2013;148(1):6-20.
3. Boroughs D, Dougherty J. Evidence-based pediatric secretion management. (n.d.) <http://ce.nurse.com/course/ce619/evidence-based-pediatric-secretion-managment>.
4. McClean EB. Tracheal Suctioning in Children with Chronic Tracheostomies: A Pilot Study Applying Suction Both While Inserting and Removing the Cather. *Journal of Pediatric Nursing.* (2012) 27,50-54.

# Medtronic

IMPORTANT: Please refer to the package insert for complete instructions, contraindications, warnings and precautions.

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