

Caring for your child's tracheostomy tube



An education program
for parents and caregivers



We would like to thank...

- ✓ The **Parents and caregivers** who gave us feedback about the content and use of this booklet. We are so grateful to have those supporting our patients take part in this project. We continue to learn from them. By working together, we can improve patient and family education at McMaster Children's Hospital.
- ✓ The **College of Respiratory Therapist of Ontario (CRTO)** for allowing us to use and adapt information from their resource 'Optimizing Respiratory Therapy Services: A Continuum of Care from Hospital to Home'.
- ✓ The **McMaster Children's Hospital Complex Care Team and other health care providers** who contributed to the development of this booklet.



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My child's tracheostomy (trach) information

Child's name:		
ENT doctor:		
Reason for trach:		
Trach tube	Type of trach tube:	
	Size of trach tube:	
	<input type="checkbox"/> Uncuffed <input type="checkbox"/> Cuffed <input type="checkbox"/> Cuff needs to be filled with _____mL of AIR or <input type="checkbox"/> Cuff needs to be filled with _____mL of WATER	
	<input type="checkbox"/> Inner cannula <input type="checkbox"/> No inner cannula	
Suction	Size of suction catheter: _____Fr to a Depth of _____cm	
How often to change tracheostomy tube:		
Trained Caregivers:	Name:	CPR Training Date:
Other:		

A message to parents and caregivers

As a parent of a child with a new tracheostomy tube, you may feel overwhelmed. There is a lot to learn before taking your child home, and you may have many questions and concerns. This is normal.

Your health care team is here to help!

Our training program will help you learn how to safely care for your child. This booklet will guide you through the program, step-by-step. We hope it will be a helpful resource for you, in hospital and at home.

Our goal is to help you feel comfortable and confident in safely providing all of your child's tracheostomy care at home.

Caring for your child's trach will change your family's daily life, but you can continue to enjoy your usual activities such as interacting with family and friends, playing, going to school and traveling.



Learning about this program

By taking part in this training program, you will learn how to care for your child's tracheostomy.

Your Respiratory Therapist (RT) will help you along the way.

We encourage you to write notes in this booklet and refer to it as often as needed.

Respiratory Therapists are highly skilled in caring for children with breathing problems and teaching families how to care and support their child.

Modules

- This program has 9 parts, called modules.
- When you are comfortable with the knowledge and skills learned in one module, you can move on to the next.
- Continue until you have completed all nine modules.

Learning Goals

- Each module begins with Learning Goals. This is a list of goals or targets for your learning.

Checklists

- Checklists in the modules identify all the steps in learning a new skill.
- Your RT will use the checklists to teach you the steps and make sure you are comfortable doing the skill on your own.

Checkpoints

- Each module ends with Checkpoints. These list the learning goals and what was learned.
- Checkpoints help you assess what you have learned in one module, before you move on to the next.

Glossary

- The Glossary at the end of the booklet defines medical words you need to know to care for your child.

Introduction

What is a tracheostomy?

A tracheostomy is an opening made in the skin through the trachea (windpipe), just below the larynx. To reach the trachea, a small hole is made in the skin, this is called a **stoma**.

A tracheostomy tube is inserted into the stoma and into the trachea. Your child breathes in and out through this tube.

Why does my child need a tracheostomy (“trach”) tube?

Your child needs a trach to keep their airway open. They may need a trach for a short time or it may be a life-long need.

Some common reasons for this are:

- Changes to their upper airway that prevents them from breathing properly. This may be due to an injury, a tumour, or a change in the structures (anatomy).
- Changes in their ability to clear mucus from their airways. They may be too weak to cough up secretions
- Needing a breathing machine (ventilator) to help them breathe.



My child has a tracheostomy because:

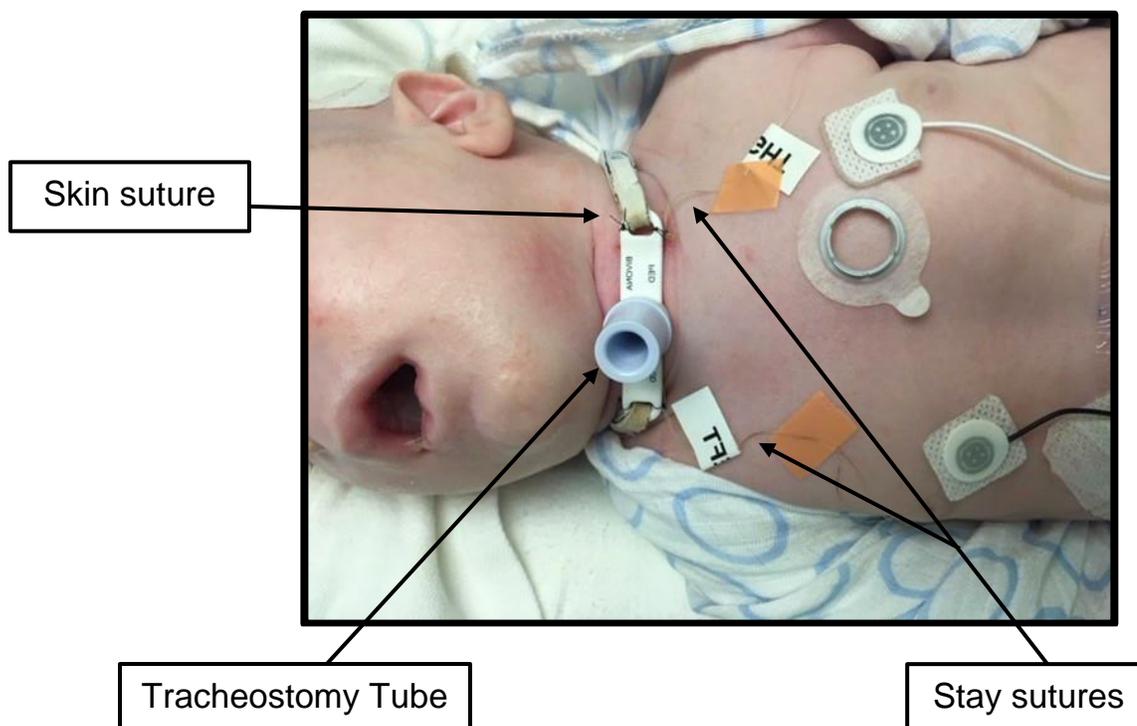
What is a tracheostomy procedure?

An Ear, Nose and Throat (ENT) surgeon will do the tracheostomy procedure. Your child will be under general anesthesia (sleeping) and will not feel or remember the procedure. Your child will receive pain control medication so that when they wake up, they will not have any pain.

Your child will continue to receive pain control medication until the pain completely goes away and the stoma heals. The tracheostomy tube is held in place with 2 types of stitches (sutures):

1. **Skin sutures** – stitches that hold the tracheostomy tube securely to the skin around the tracheostomy
2. **Stay sutures** – longer stitches that extend through the stoma and are secured to your child's chest. These sutures help keep the airway open in case the tracheostomy tube needs to be reinserted in an emergency.

The skin sutures and stay sutures are removed when the tracheostomy tube is changed the first time. The ENT surgeon will change the tracheostomy for the first time 7 to 10 days after the surgery.

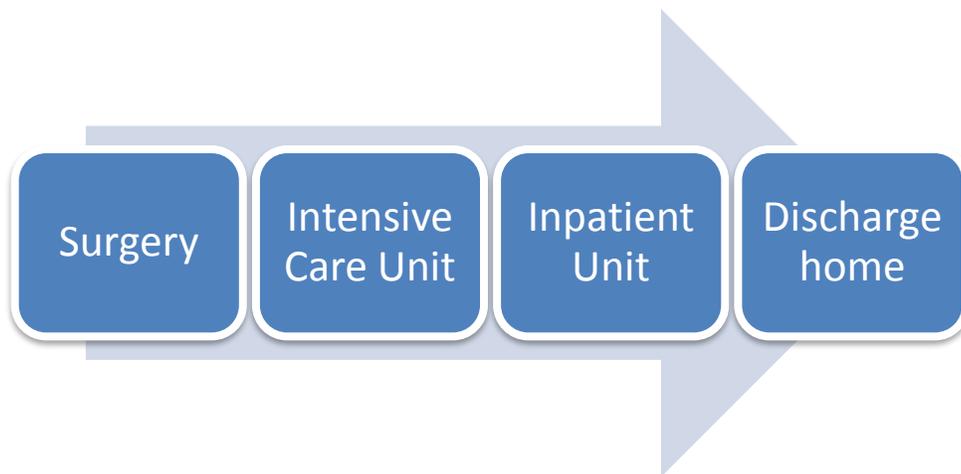


After the tracheostomy procedure

Your child will go to the Neonatal or Pediatric Intensive Care Unit (NICU or PICU) to be monitored closely. They may be sedated (with medication) for up to one week to allow the stoma to heal around the tracheostomy tube. This means your child will be sleeping and on a breathing machine (ventilator) during this time. For a few days after the procedure, it is normal for your child's stoma to have some bleeding inside or around the stoma.

You will meet the Complex Care Team and the Respiratory Home Care Coordinator in the intensive care unit. The Respiratory Home Care Coordinator will begin teaching you about your child's tracheostomy care.

Your child may be transferred to the Complex Care Inpatient Unit when they are stable or remain in the NICU or PICU. The Home Care Coordinator will continue your training and the bedside staff will support your learning. Our goal is for you to feel comfortable and confident in caring for your child's tracheostomy.



Your health care team will begin to discuss steps towards discharge early on. Your child will need two fully trained caregivers to ensure a safe discharge home. All caregivers will need CPR training. You may want to schedule this as soon as possible. You will need special equipment and supplies to care for your child's trach.

The health care team will:

- Help you apply for funding for this equipment and teach you how to use it.
- Arrange for you to receive all of the equipment before discharge.
- Make sure you have the knowledge and skills to safely care for your child.

Every family goes through this process at a different pace and your health care team will be here to support you every step of the way!

What about my child and their sibling(s)?

Your child and their sibling(s) may have a difficult time understanding your child's need for the tracheostomy, the hospitalization and the care of the tracheostomy. Your children may have difficulty coping with all of these changes at first.

Child Life Specialists can help children of all ages understand and cope with the hospitalization.

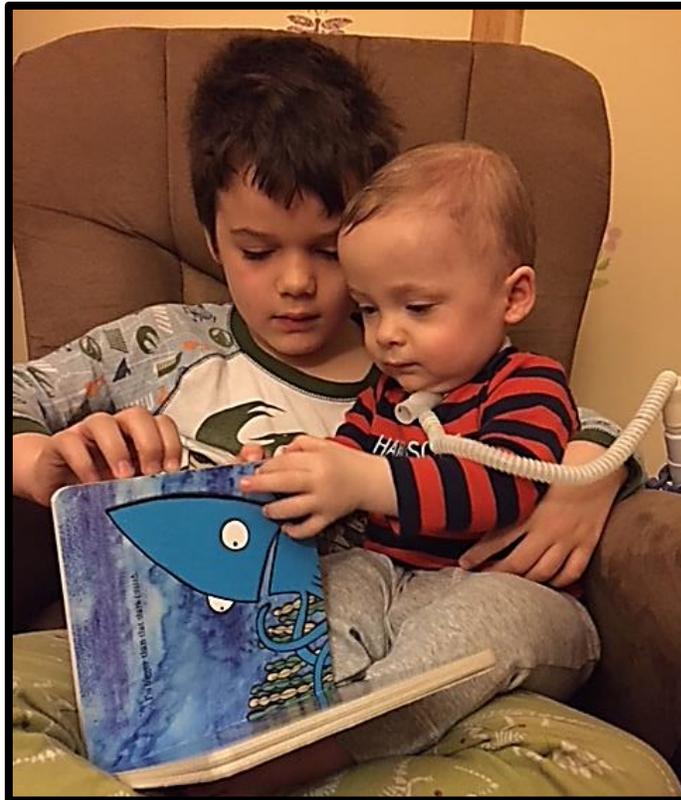
Child Life Specialists can help your children by:

- Talking to them about the trach before surgery.
- Teaching them about the tracheostomy and the care of the tracheostomy.
- Helping with coping by encouraging the sibling to play and continue normal activities while your child is in hospital.



Other things you can do to help support siblings include:

- Talking about your child's tracheostomy with your other children.
- Allowing the sibling to ask questions about the trach.
- Showing acceptance and being comfortable with the trach to promote comfort for the sibling.
- Encouraging or arranging for the sibling to visit whenever possible.
- Allowing the sibling to be present when you are caring for the trach.
- Planning for private time with the sibling.



Other family members

Just like your child's siblings, other family members may have a difficult time understanding and coping with the tracheostomy. It is also important to talk to them about the tracheostomy and allow them to visit (if possible). You may also feel it is important to set aside time to spend with these family members. This can be challenging at times, but these family members can be important supports during this busy time. Your family members can also be trained by your health care team in your child's tracheostomy care. If you wish to have other family members trained or have questions about this please speak with your Respiratory home care coordinator.

Parent and caregiver considerations

It is also important for you to care for yourself and take time for yourself. It is not unusual for you to experience a wide range of emotions including grief, sadness, anger or anxiety.

There are a few things you can do to help cope with all of the new changes when in hospital:

- Take some time for yourself. This might include planning for quiet-time, continuing hobbies or spending time with family and friends.
- Make sure to continue to spend time with your other children and your close family and friends so they can support you while in hospital.
- Make arrangements with your work so you can spend time with your child in the hospital to learn their care.
- Consider other family or friends that could be trained by your health care team in your child's tracheostomy care. Having additional support when home will be very helpful.
- You might find it helpful to look into online support groups or websites where parents and caregivers of children with tracheostomies can discuss their experiences.
- Ask your health care provider if it is possible for you to meet another family who has gone through the same training recently. This is normally something that we can arrange and other families have found very helpful.
- You might also find it helpful to see your family doctor.

If you are having trouble coping or you are feeling that you need to talk to someone about how you are feeling, please speak to our **Social Worker**.

What about school?

Children with a tracheostomy can attend school or child care settings when the appropriate supports are arranged. It will be important to discuss your child's needs with their school early on so that supports can be put in place if not previously available. There must be someone in the school or child care setting who is fully trained in caring for a child with a tracheostomy. This person will always stay with your child at school or the child care setting and will be comfortable in responding to possible tracheostomy emergencies.

Module
1

Understanding the need for your child's trach

Learning goals

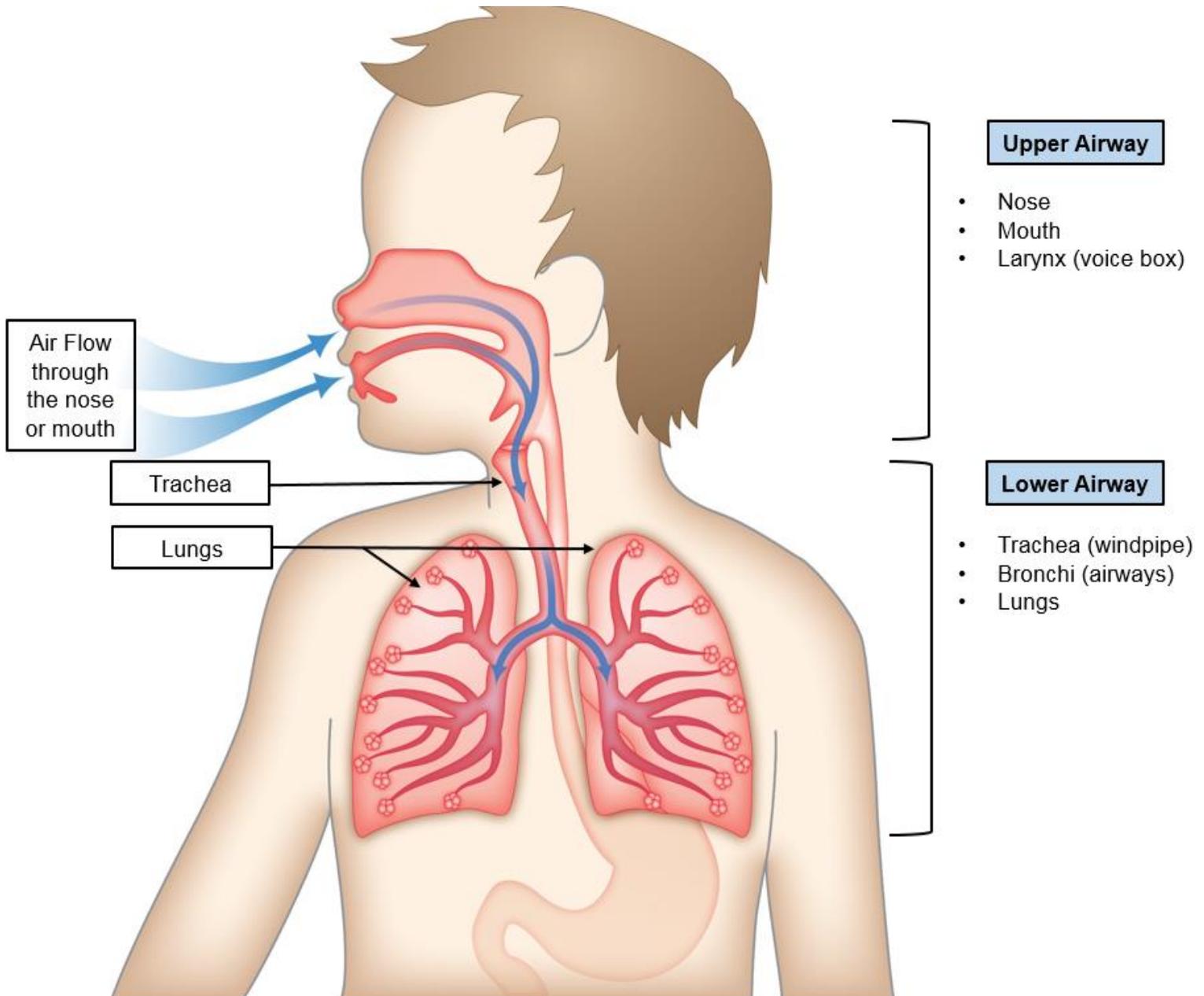
When you finish this module you will be able to:

- Explain how the respiratory system works
- Describe how the trach helps your child breathe
- Take steps to prevent infections at home
- Describe the signs of a respiratory infection



How does the respiratory system work?

The parts of the respiratory system work together to help you breathe. Air enters through your **upper airway** which consists of your nose, mouth and larynx. Then air continues down to your **lower airway** which consists of your trachea, bronchi and your lungs. We will explain how each part of your respiratory system works and how you breathe in and out.



Breathing in

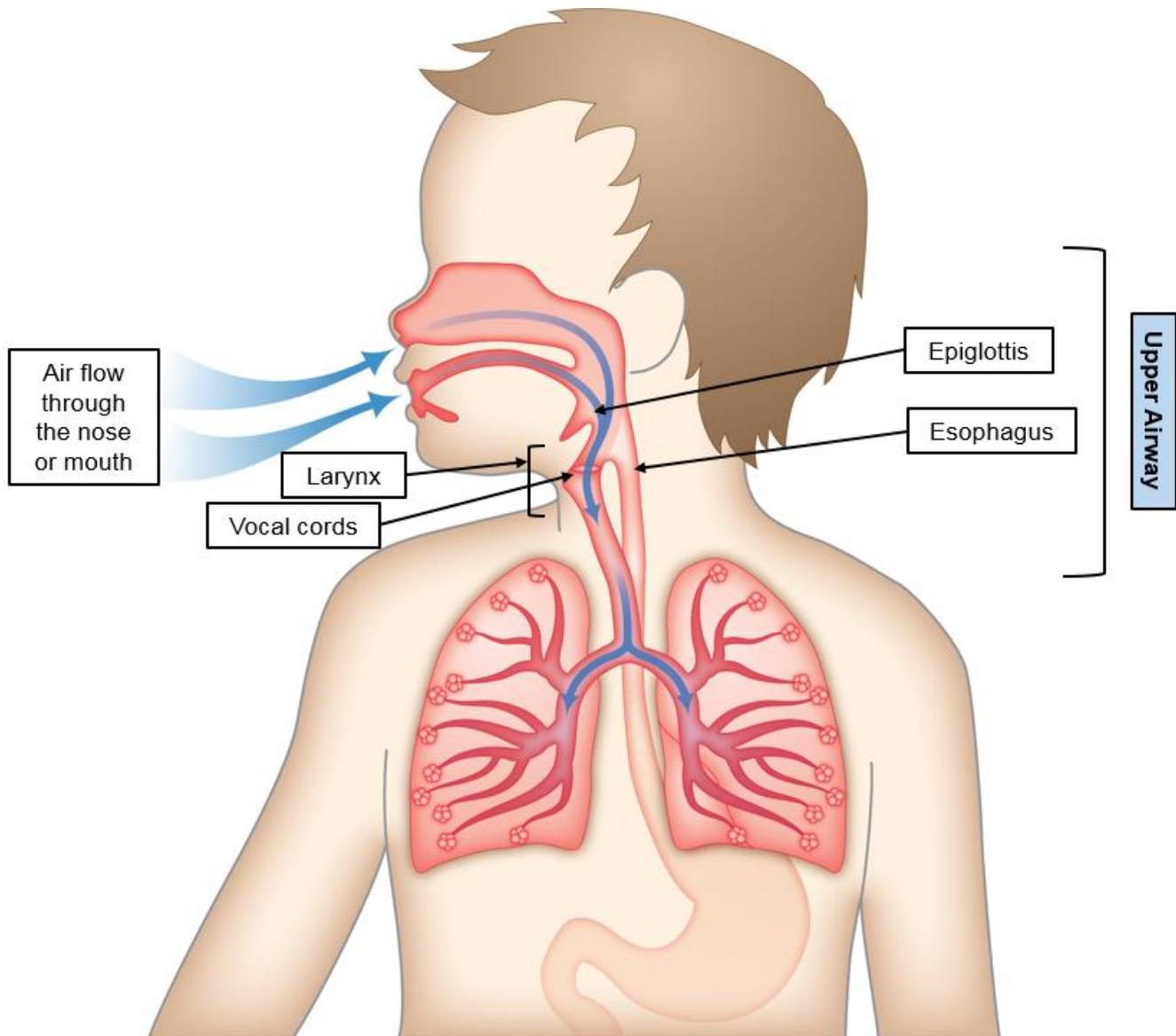
Your upper airway

When the large muscle called the **diaphragm** contracts, it moves down and out, pulling air into the body. For more information about the diaphragm see page 19.

Air enters through the **nose**, where it is warmed, moistened and filtered by the tiny hairs lining the nose. If air enters through the **mouth**, it is warmed and moistened, but not filtered.

Air moves from the nose or mouth and passes:

- The **epiglottis** - a flap that closes to prevent food and drink from entering the airway.
- The voice box (**larynx**), which contains the vocal cords that make sounds when air passes through.



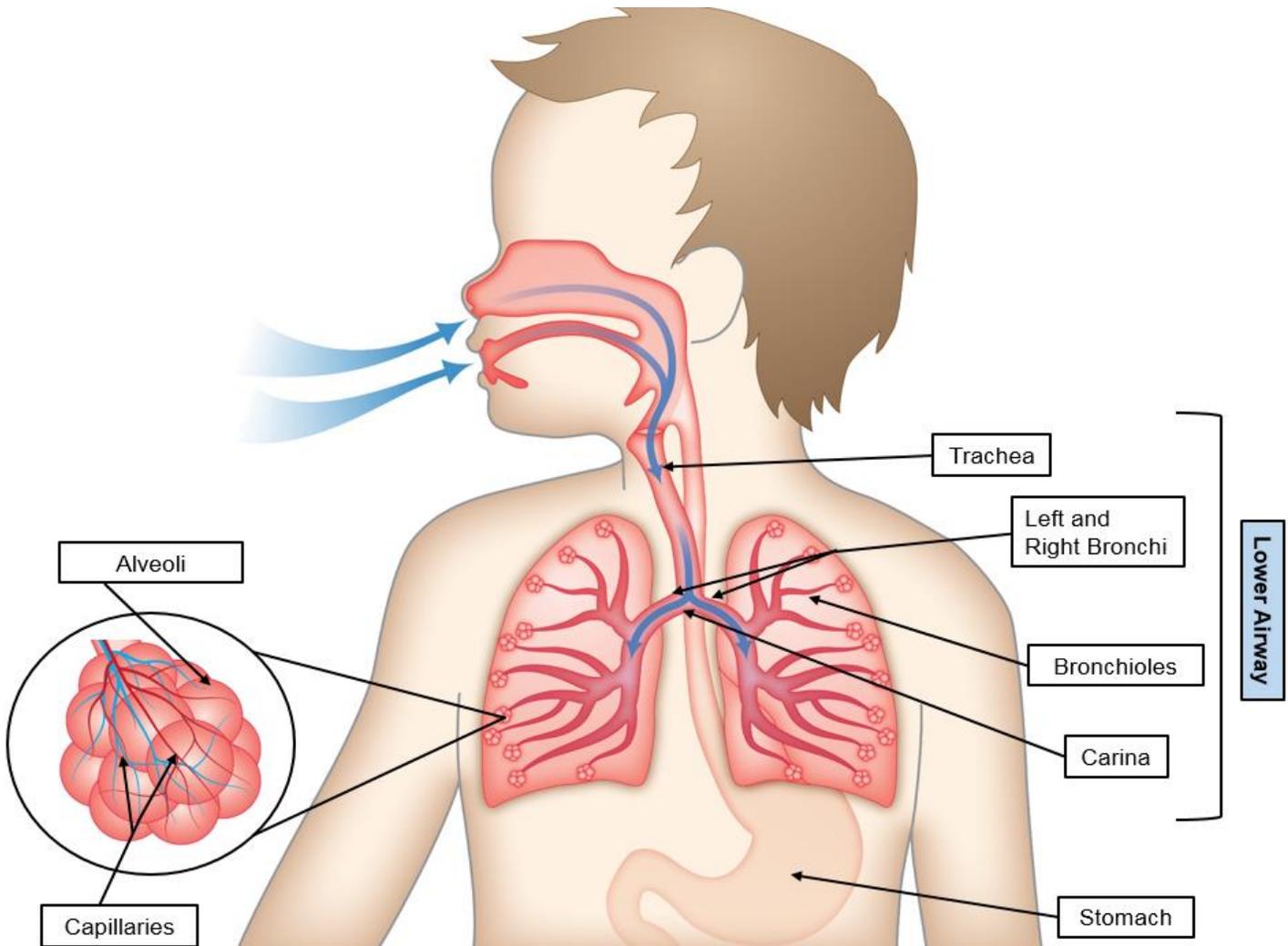
Your lower airway

As air continues down to your lower airway it moves from the upper airway to the lungs through a tube called the **trachea** or windpipe. Air then reaches the end of the windpipe called the **carina**, and it moves into two large tubes (left and right **bronchi**), which bring the air into the left and right lungs.

Air moves into smaller tubes, called **bronchioles**. These tubes make mucus that traps dust, germs and other unwanted particles in the air. Tiny hairs called cilia move back and forth in a sweeping motion, moving the mucus up, towards the throat where it can be coughed out or swallowed. The bronchioles get smaller and smaller, ending in tiny air sacs called **alveoli**. Each air sac is surrounded by tiny blood vessels called **capillaries**.

Inside the alveoli:

- **Oxygen** moves from the air into the blood. The red blood cells in the blood stream delivers oxygen to all parts of the body, where it can be used to make energy.
- Unwanted waste, such as **carbon dioxide**, moves from the blood into the air inside the alveoli. This air will leave the body when you breathe out.



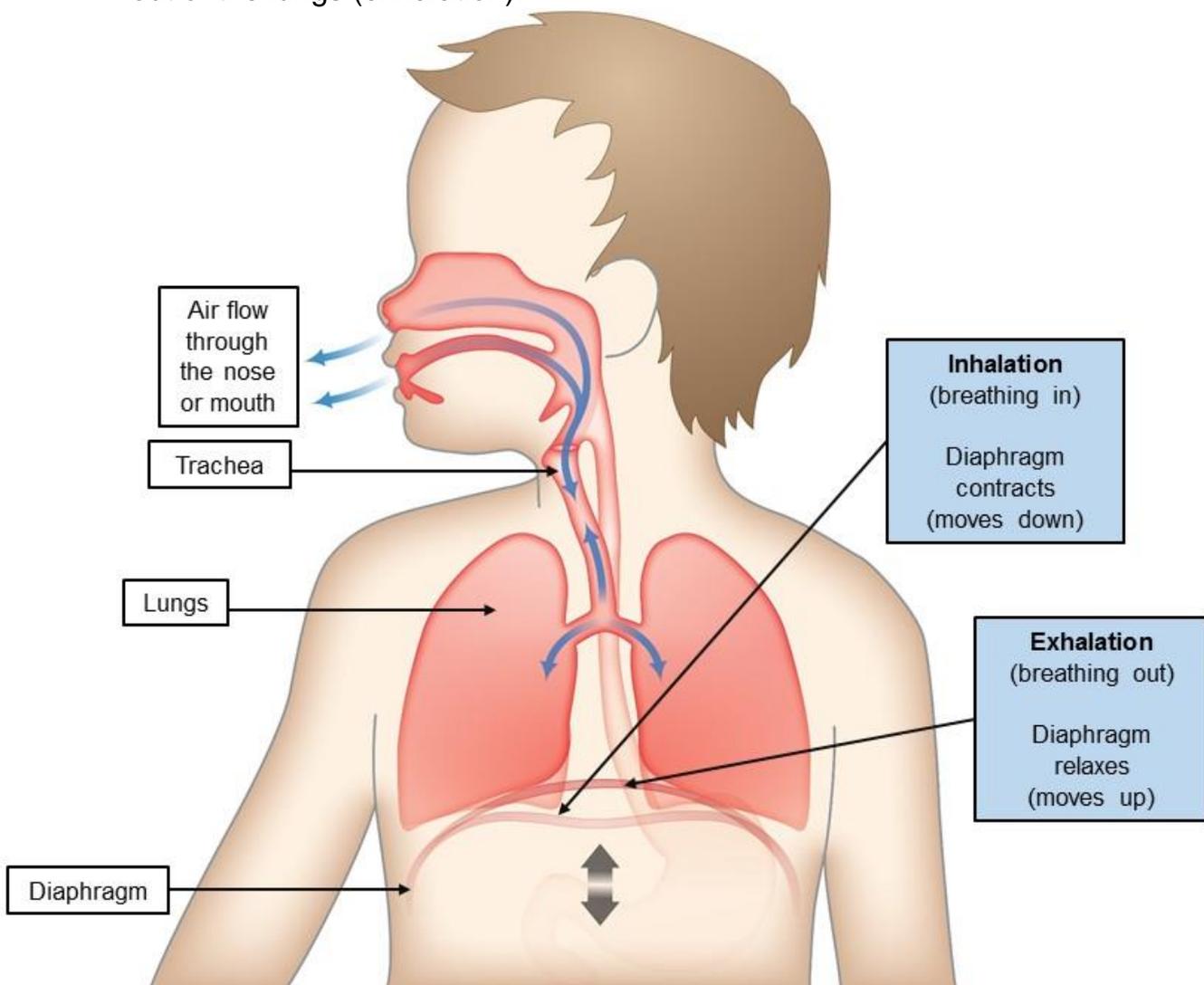
Breathing out

The diaphragm and muscles between the ribs relax. This makes the ribs gently fall, helping air to come out from the lungs. The air sacs begin to empty, the air that now contains carbon dioxide, starts to move out of the lungs. Air moves up from the alveoli to the bronchioles, bronchi and trachea, and out of the body through the mouth and nose.

When you cough or sneeze, all the muscles (diaphragm, intercostal and abdominal) work hard to push the air out quickly.

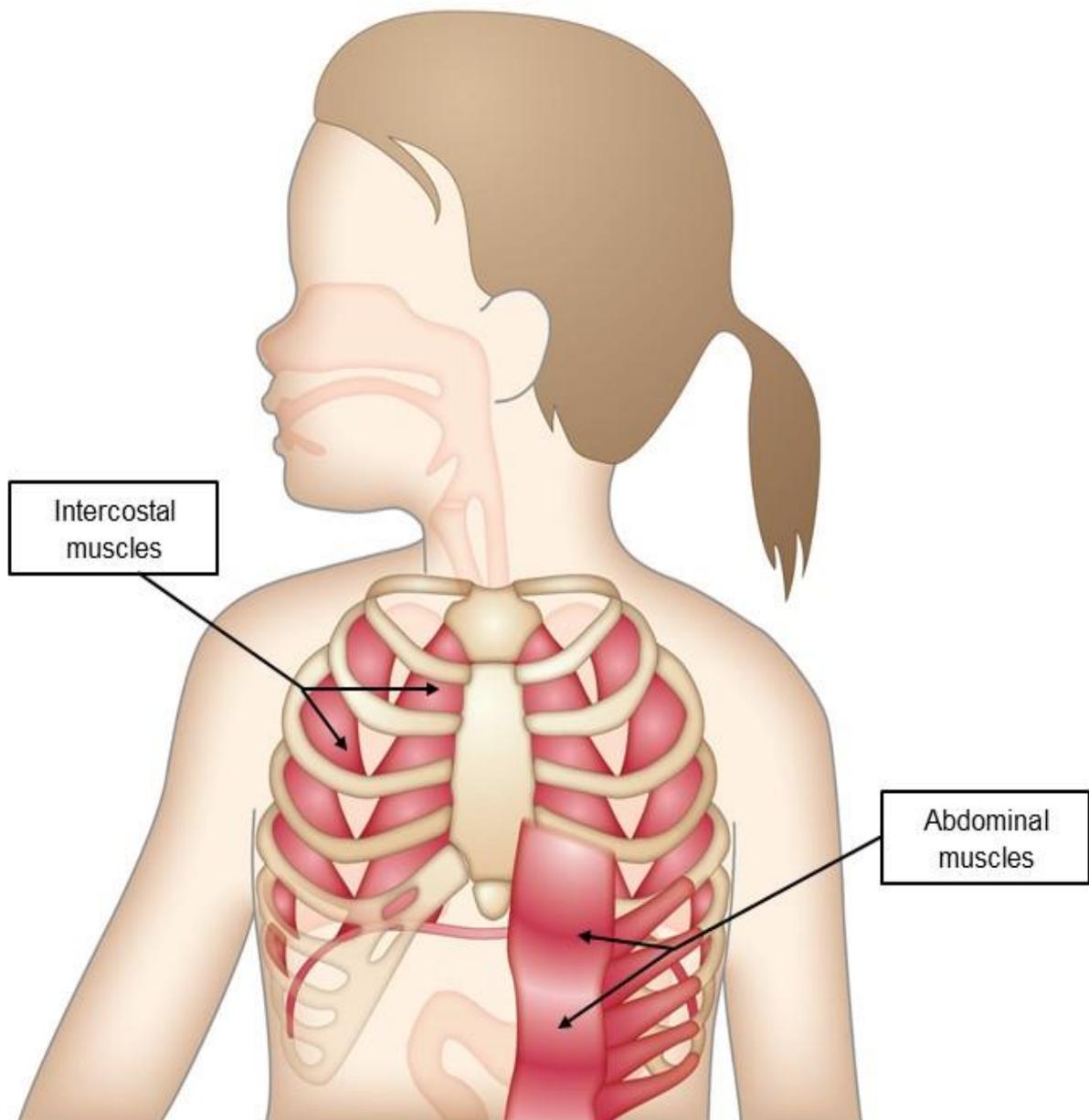
Muscles of breathing

The diaphragm is the most important muscle of breathing. When the large muscle called the **diaphragm** contracts, it moves down and out, pulling air into the body (inhalation). When the diaphragm relaxes, it moves up and in, pushing out of the lungs (exhalation).



Muscles of breathing

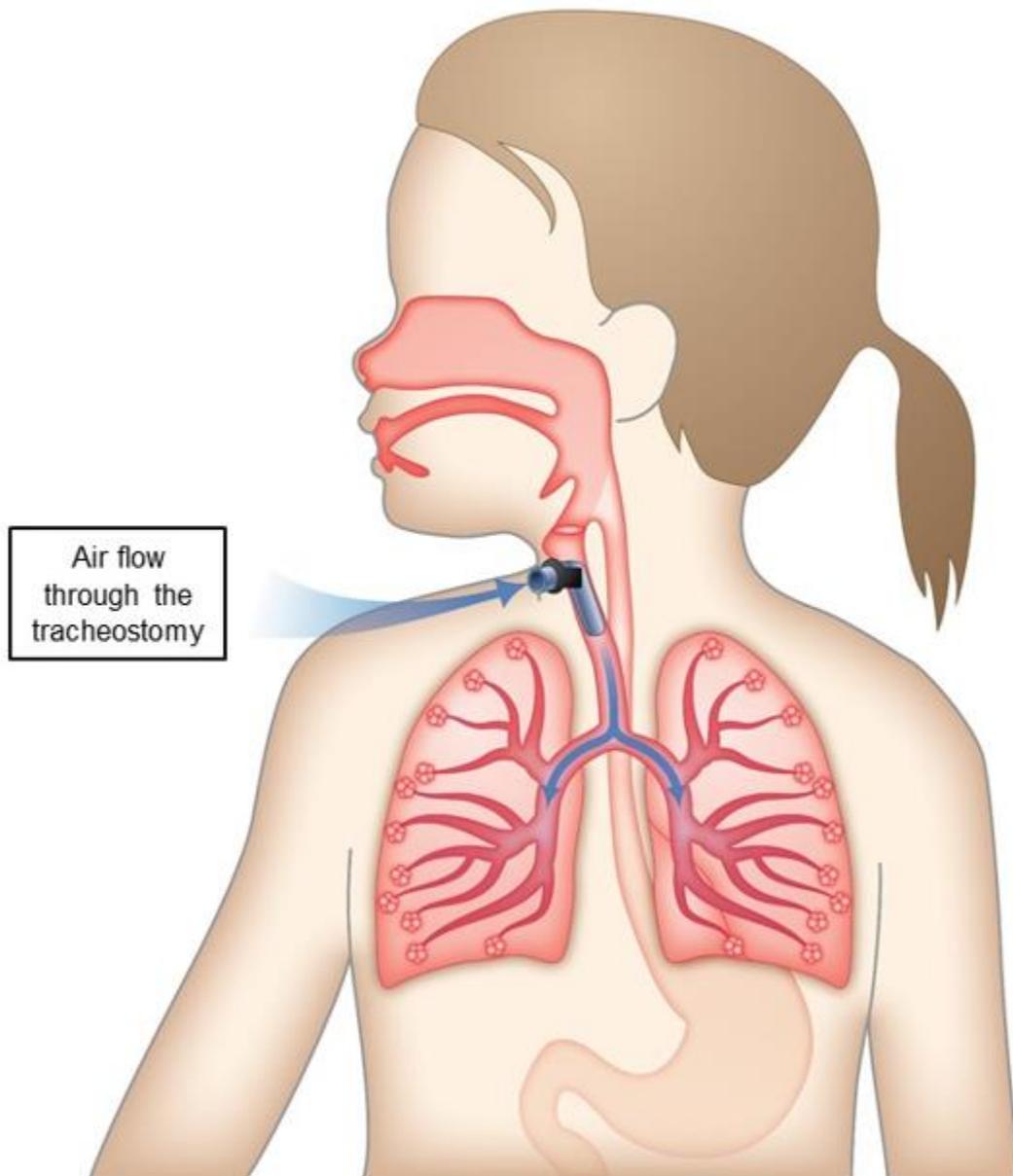
When needed, **intercostal muscles** (between the ribs) and **abdominal muscles** (over your stomach and belly) help you breathe and cough. The intercostal and abdominal muscles help you breathe but do not control breathing like the diaphragm does.



How does the trach help my child breathe?

Your child breathes in and out through the tracheostomy tube. With trach tubes, the air goes right into the lungs and not through the nose first. Depending on the size of the trach and trach tube, some air may still go in and out of your child's nose and mouth.

Because the air bypasses the nose, it must be warmed, moistened and filtered before going into the trach tube. This can be done in different ways, such as humidifiers or a heat moisture exchanger. We will discuss these in future modules.



How can we keep the trach safe and free from infection?

For your child’s health and safety, it is very important to prevent the spread of germs that cause infections.

You can do this by:

- ✓ Cleaning your hands often
- ✓ Making sure all visitors clean their hands often
- ✓ Keeping the air clean
- ✓ Keeping the trach and equipment clean

Clean hands often

Everyone who comes into contact with your child needs to wash their hands well and often. Keep nails short and clean.

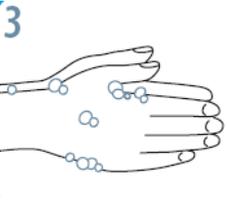
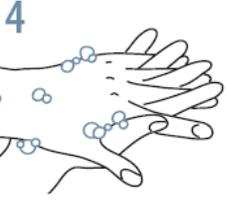
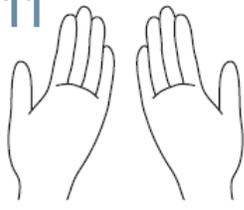
When to clean your hands	
Before you:	<ul style="list-style-type: none">• provide any care to your child• handle any of your child’s trach supplies or equipment
After you:	<ul style="list-style-type: none">• provide care to your child’s trach• provide personal care for your child, such as changing their diaper• handle your child’s trach equipment

There are 2 ways to clean your hands. Using soap and water or a hand sanitizer. If your hands are visibly dirty or greasy, use soap and water.



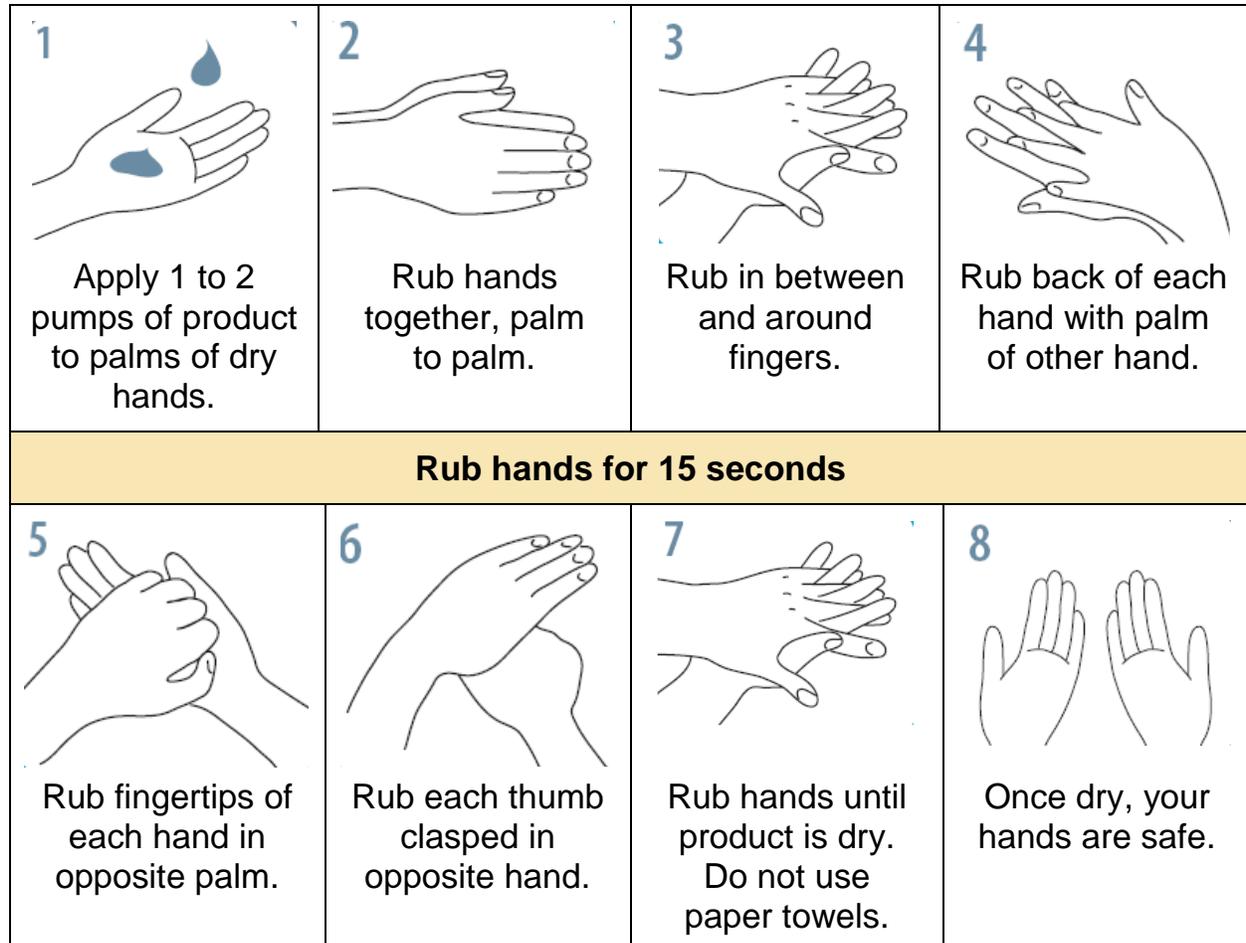
How to clean your hands with soap and water

Before you start, remove all jewelry.

 <p>1</p>	 <p>2</p>	 <p>3</p>	 <p>4</p>
Wet hands with warm water.	Apply soap.	Lather soap and rub hands palm to palm.	Rub in between and around fingers.
Lather hands for 15 seconds			
 <p>5</p>	 <p>6</p>	 <p>7</p>	 <p>8</p>
Rub back of each hand with palm of other hand.	Rub fingertips of each hand in opposite palm.	Rub each thumb clasped in opposite hand.	Rinse thoroughly under running water.
 <p>9</p>	 <p>10</p>	 <p>11</p>	
Pat hands dry with paper towel.	Turn off water using paper towel.	Your hands are now safe.	

How to clean your hands with a hand sanitizer

Before you start, remove all jewelry.



Keep the air in your home 'clean'

- Make sure your home is smoke free. Do not let anyone smoke around your child.
- Ask people NOT to visit if they have a cold, the flu or feel unwell. If they need to be near you or your child, ask them to wear a mask and wash their hands often.

Keep the trach and equipment clean

- We will teach you how to clean your child's trach and how to clean the equipment.
- Replace equipment and supplies when needed, following the guidelines from your health care team and the equipment manufacturer.

What are the signs of a respiratory infection?

If your child has any of these signs, it may mean they have an infection.

Your child:

- is coughing more
- is breathing faster or is more short of breath
- is wheezing or their breathing sounds different
- has a fever (over 38°C or 100.4°F) or chills
- feels unwell or is very tired
- is irritable and inconsolable

Your child's mucus:

- is thicker than usual and/or there is more of it than usual
- is yellow or green
- has an unpleasant odor
- is streaked with blood

Your child:

- needs to be suctioned more often
- needs to take puffers or inhaled medication more often
- has lower than normal oxygen saturations
- needs higher than normal oxygen (if applicable)

Your child's stoma:

- is red, swollen or painful
- has yellow or green discharge on the skin or dressing



If you notice any signs of infection, contact your health care provider.

Your child may need to come to the hospital for assessment and possible treatment.

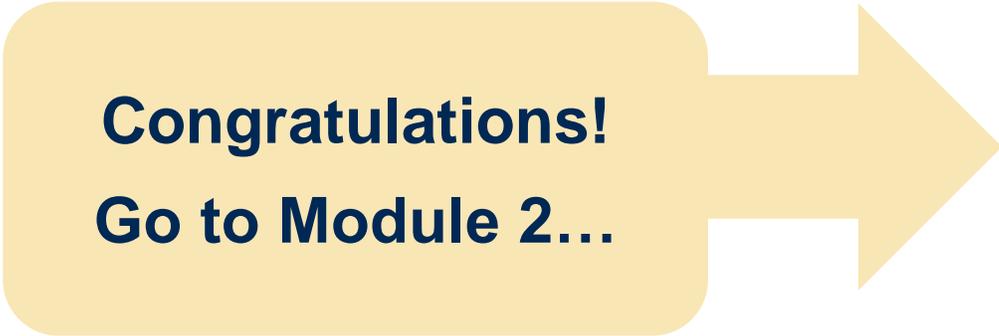
Module 1 Checkpoint

Have you reached your learning goals?

Review this list with your Respiratory Therapist:

- I can explain how the respiratory system works
- I can describe how the trach helps my child breathe
- I know what can prevent infections at home
- I can describe the signs of a respiratory infection

When you are confident that you have achieved these learning goals you are ready to go to the next module.



Congratulations!
Go to Module 2...

Module 2

Understanding the parts of a trach and their care

Learning goals

When you finish this module you will be able to:

- Identify the parts of a trach tube and how they work
- Identify the brand of trach that your child uses
- Identify the size of trach that your child needs
- Care for your child's stoma
- Care for the inner cannula of your child's trach (if applicable)



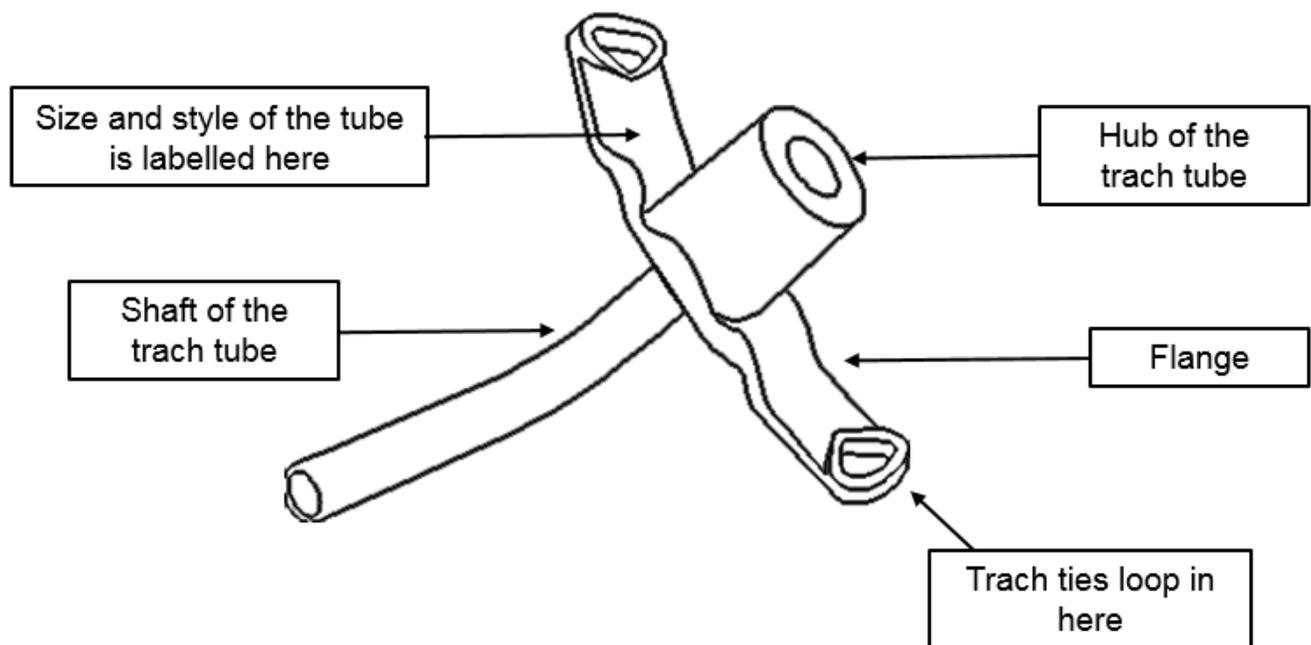
What are the parts of a trach tube and how do they work?

There are different types of trach tubes, but all have the same basic parts.

The trach tube

- The size and length of the trach tube will depend on the size of your child and their neck.
- The trach tube is made up of the hub at the top of the trach (entrance site), the flange that sits against the neck and the shaft, the curved tube that enters through the stoma into the trachea.

Parts of the Trach tube

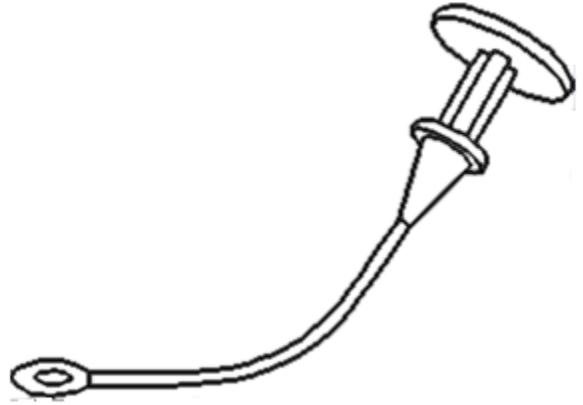


The flange

- The flange is the flat part of the trach tube. It lies against your child's neck and holds the trach tube to the neck.
- The flange has holes for the trach ties that hold the trach tube in place.
- Markings on the flange show the size and brand of the trach tube.
- The flange can be straight or V-shaped.

The obturator (*OB-ter-ay-ter*)

- The obturator is a tool that helps you insert the trach tube into the stoma. When the obturator is placed inside the trach tube, it helps support the tube and the rounded tip helps guide the trach tube through the stoma and into the trachea.
- When the trach tube is in place, the obturator is removed. This leaves the trach tube open.
- The obturator is made to fit a certain size and brand of trach tube. You cannot use an obturator from a trach tube that is a different size or brand.



Keep the obturator where it is easy to find.

If the trach tube falls out, you will need to re-insert it using the obturator that came with the trach tube.

The cuff

- Trach tubes are made with and without a cuff.
- A trach tube with a cuff has a balloon near the end of the tube.
- When the balloon is inflated, it forms a seal against the walls of the trachea. The seal stops air from flowing up through the vocal cords into the mouth and nose.
- The cuff would be inflated when a breathing machine is needed or in rare situations to manage secretions.
- Some cuffs are filled with sterile water, other are filled with air. When filled, the cuff is “up”.
- You will use a syringe to measure the amount of sterile water or air needed to fill the balloon through the pilot line. The amount will depend on the size of your child’s airway and trach tube and will be ordered by your doctor.

Your child may have an uncuffed trach tube, without a cuff or ‘balloon’ at the end.

Cuffed trach with cuff “up”/ inflated



Cuff balloon
“up” or inflated

Pilot balloon inflated when the
cuff is “up” or inflated

- When the cuff is deflated, it is ‘down’. There is no seal against the trachea. Air can go up through the vocal cords, mouth and nose.

Cuffed trach with cuff “down”/ deflated



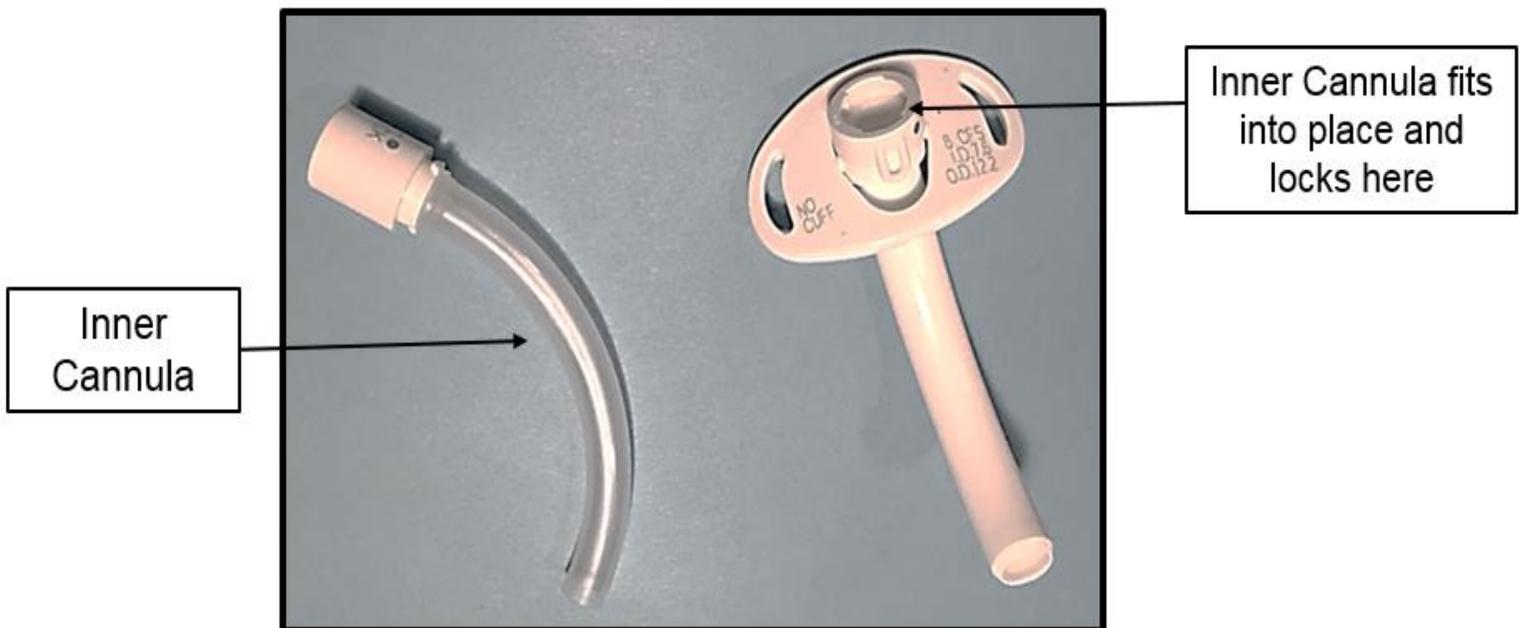
Cuff balloon
“down” or deflated

Pilot balloon deflated when the
cuff is “down” or deflated

The inner cannula

- An inner cannula is a smaller tube that fits into the trach tube. It is removed routinely so that secretions do not build up in the tube. It also can be removed quickly if the tube becomes blocked by mucous.
- Some inner cannulas lock by clipping in place. Others twist on and off.
- Some inner cannulas are disposable, and others can be reused and must be cleaned often. We will teach you how to clean an inner cannula later in this module (see pages 47 to 50).

Not all trach tubes have an inner cannula.



What are the different brands and types of trach tubes?

It is important to know what brand and type of trach tube your child uses. The brands we commonly use for children are Shiley and Bivona trach tubes. Your Respiratory Therapist will tell you which brand and type of trach tube your child uses.

Shiley tracheostomy tubes:

- Are made of Polyvinyl Chloride (PVC) plastic. They cannot be re-sterilized or reused.
- Are available with or without a cuff. A cuffed Shiley trach is always filled with air.
- Are available with or without an inner cannula. A Shiley trach with an inner cannula may be used with older children, but never with small children or infants due to their airway being smaller.

Cuffed Shiley trach



**Always fill your child's Shiley Trach tube cuff with AIR.
NEVER fill the cuff with water.**

Bivona tracheostomy tubes:

- Are made of silicone.
- Are available with or without a cuff. A cuffed Bivona trach tube is filled with sterile distilled water.
- Do not have an inner cannula.
- Have a SuperSlick coating that keeps mucus from sticking to it. When cleaning these tubes refer to the manufacturer's instructions, do not scrub them too hard or the coating may come off. Inspect the tube before use.
- Have a metal wire inside the tube that reinforces the shaft so that it doesn't kink or bend. Since this tube contains metal, please let your health care team know about this if your child is going to have a surgery or an MRI.

Cuffed Bivona Trach



Bivona makes a type of trach tube called the Bivona[®] TTS[™] (“Tight To the Shaft”). When the cuff is deflated (contains no water) and is down, it flattens very close to the outside of the tube, which may allow for sound or speech.



Important

**Fill your child's Bivona trach tube cuff with STERILE DISTILLED WATER.
Never fill the cuff with air, as the air will leak out.**

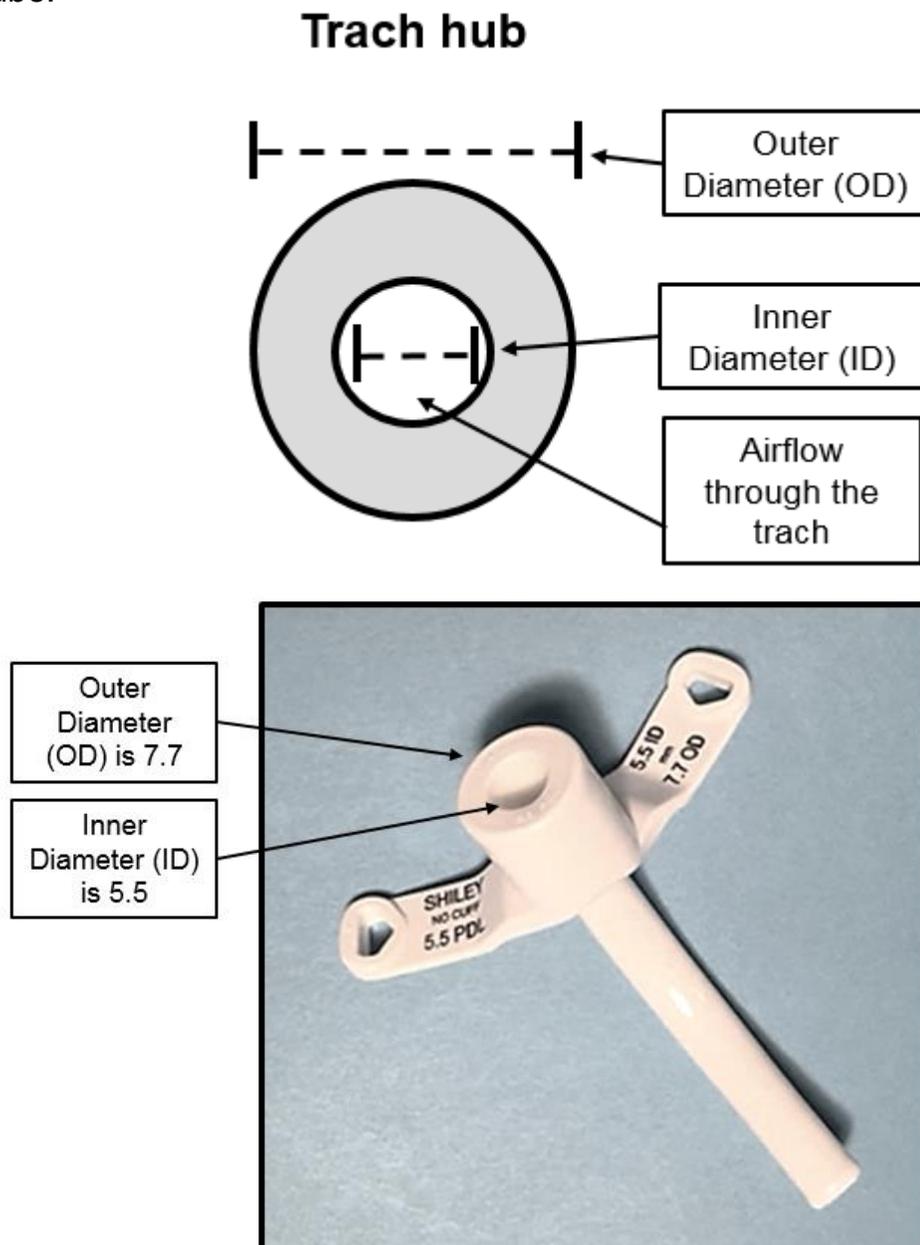
Checklist for the cleaning and sterilization of a Bivona trach tube

<input checked="" type="checkbox"/>	Steps
Bivona trach tubes will need to be cleaned and sterilized before they can be reused. Please refer to the manufacturer's instructions for more information.	
To clean the Bivona trach tube	
<input type="checkbox"/> 1.	Wash your hands and put on clean gloves.
<input type="checkbox"/> 2.	Place the dirty trach tube and its obturator separately in a container with warm water and mild dish soap.
<input type="checkbox"/> 3.	Make sure all parts of the trach tube are cleaned with the soapy water. This may including pouring soapy water through the trach tube or using gauze to gently wipe off dried-on mucous.
<input type="checkbox"/> 4.	Rinse the inside and outside of the trach tube with water and air dry.
<input type="checkbox"/> 5.	Once the tube is clean, inspect it for cracks or breaks. If there are cracks or breaks, the trach should be discarded.
To sterilize the Bivona trach tube there are two options for sterilization.	
Option 1: Using an electric steam disinfecter	
<input type="checkbox"/> 1.	Place the clean trach tube and obturator separately in an electric steam disinfecter such as a baby bottle disinfecter.
<input type="checkbox"/> 2.	Turn on the disinfecter and use the controls to disinfect as per the manufacturer's instructions.
<input type="checkbox"/> 3.	Allow the trach to air dry and place in a clean container. Use this container only to store sterilized trach tubes.
Option 2: Boiling the trach tube	
<input type="checkbox"/> 1.	Bring water to boil in a pan that is only used for trach sterilization.
<input type="checkbox"/> 2.	Place the trach tube and obturator separately in the boiling water.
<input type="checkbox"/> 3.	Cover the pan and remove it from the heat. Allow the water to cool so that you can remove the trach tube and obturator safely.
<input type="checkbox"/> 4.	Handle the obturator by its handle and the trach tube by the flange and place them in a clean container. Use this container only to store sterilized trach tubes.
<input type="checkbox"/> 5.	Discard the water and clean the pan with mild dish soap.

What are the different sizes of trach tubes and why is this important?

Children's trach tubes come in many sizes. There are tracheostomy tubes for neonates, pediatric patients and adult patients. It is important to know the current size of your child's trach tube. Your Respiratory Therapist and your ENT doctor will reassess and may change the size of tube as your child grows. A trach tube half (1/2) size smaller may be used in an emergency or other special situation.

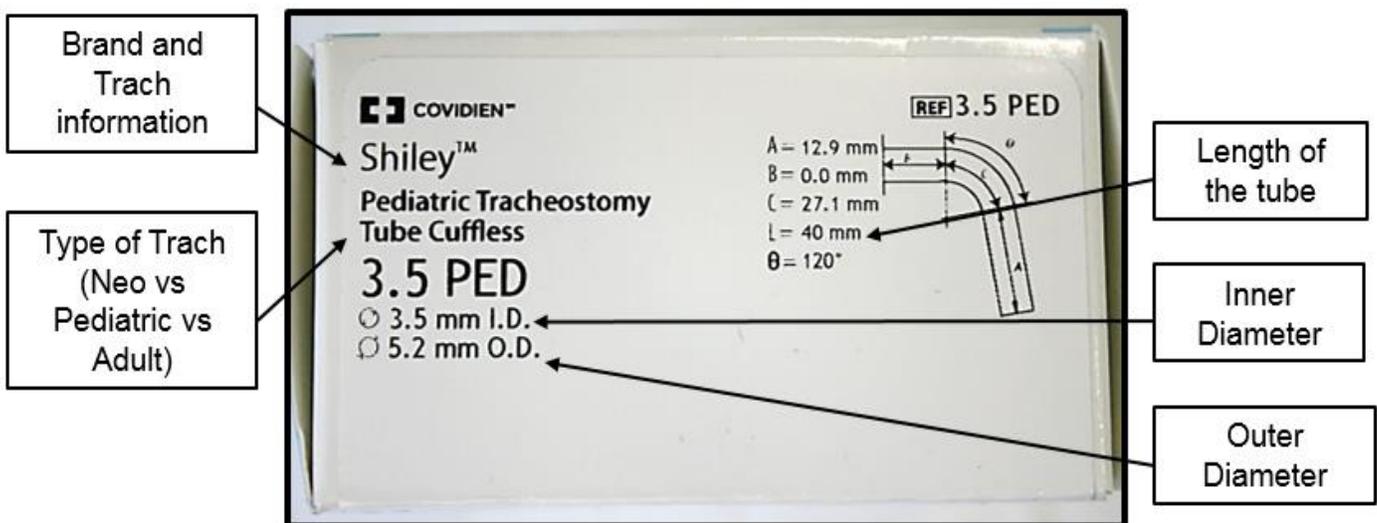
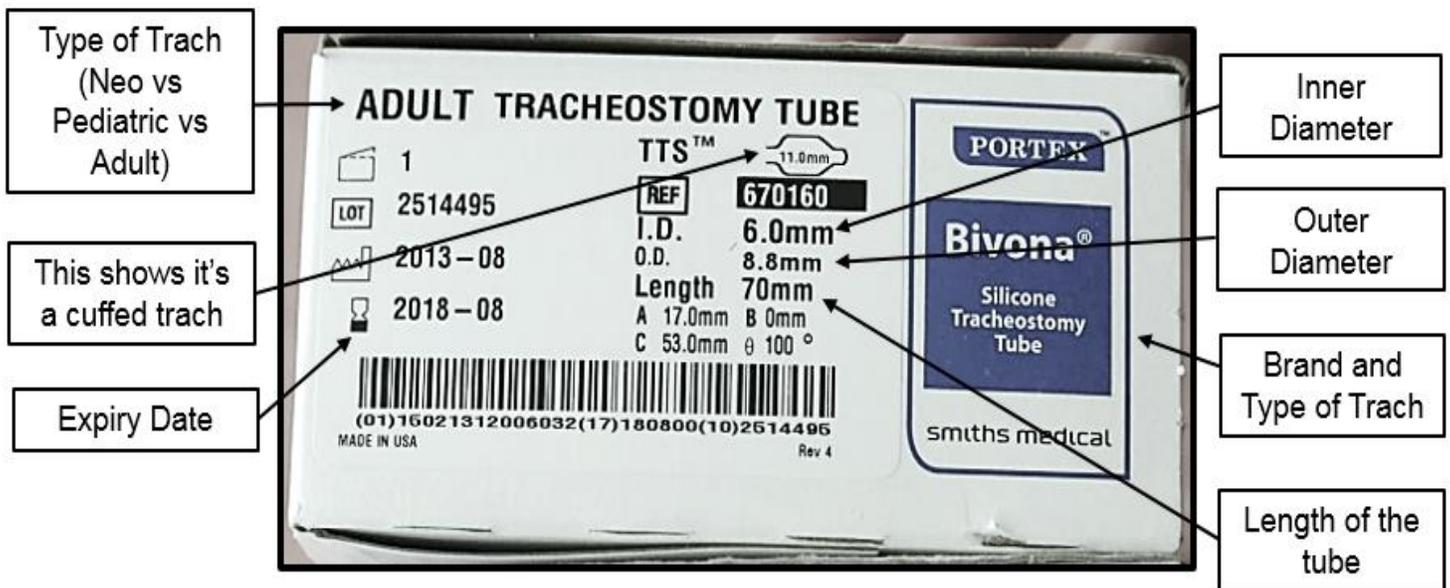
Your child's trach tube will have 2 numbers. The numbers will be the measurement of the diameter of the circles inside the tube and outside the tube in millimeters (mm). The **Inner diameter (ID)** is the diameter of the inner trach tube opening and the **Outer diameter (OD)** is the diameter of the outside of the trach tube.



- The inner diameter of the trach tube determines the size of the suction catheter that will fit into the trach tube.
- The diameter of the suction catheter is measured in French (Fr). This number represents the inner diameter x 2 and rounded up.

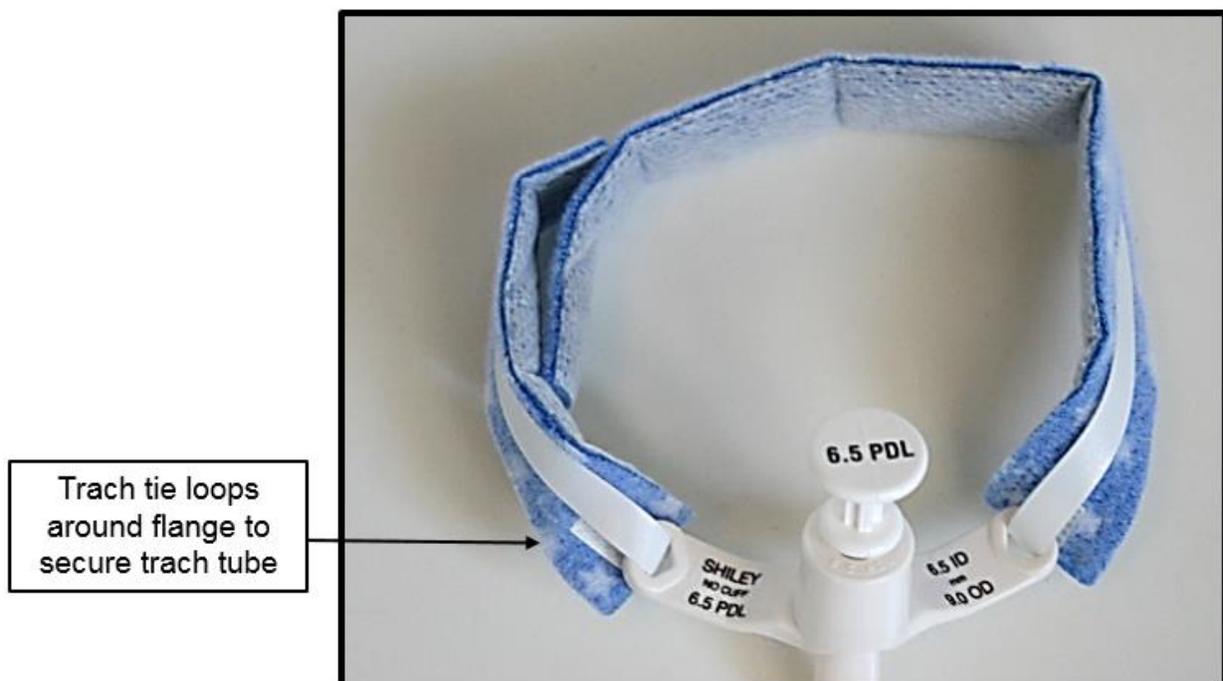
You can always refer to the tracheostomy's box for all of the information about the type and size of your child's tracheostomy. This box will also give you the expiry date. It is important to check the expiry date before each trach change to ensure that the trach is not expired. The pictures below provide examples of where you can find all of the information you need.

Information located on the tracheostomy box



The trach ties

- Trach ties help secure the trach tube to the neck, so it will not fall out.
- Take care when putting trach ties on and changing trach ties. They should not be tied too tight or too loose. You will always need a second person to help you with this.
- When secure on a baby or child, you should be able to only fit one finger underneath the trach ties at the back of the neck.
- When secure on an adolescent or adult, you should be able to only fit two fingers underneath the trach ties at the back of the neck.

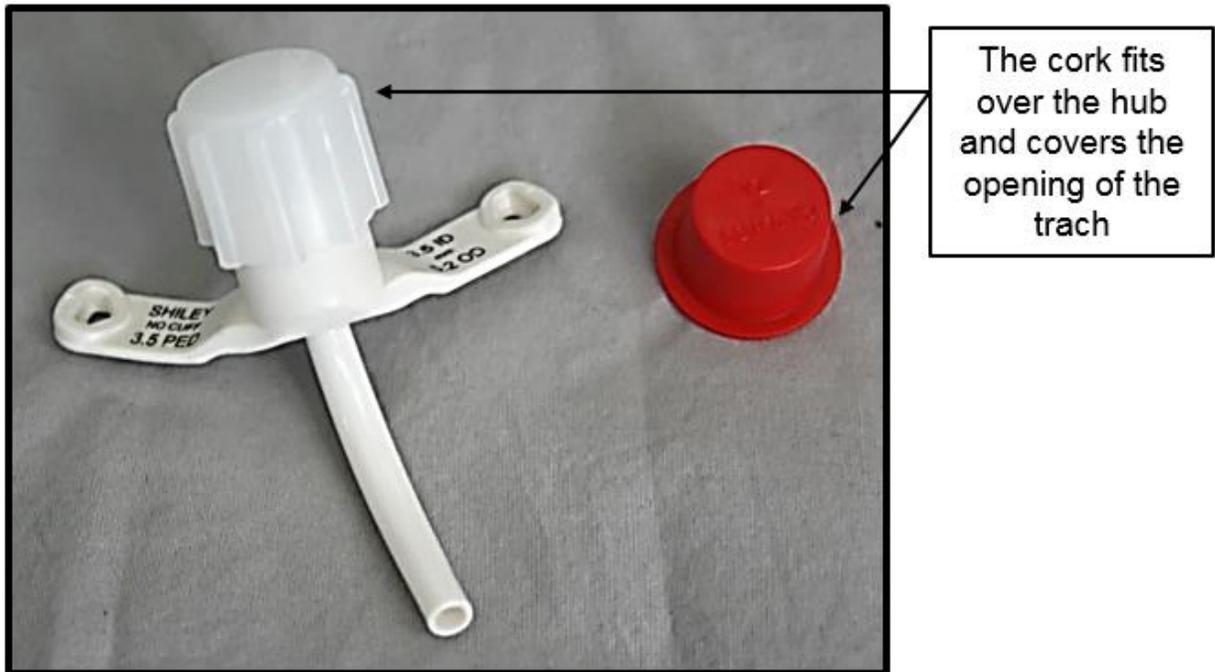


The cork

- The cork is a plastic cover that fits over the opening of the trach. Depending on the type of trach tube, it may also be called a button, plug or cap.
- The cork blocks the trach tube allowing your child to breathe around the trach tube, through their nose and mouth, using their upper airway. It may also help your child speak.

Using a cork:

- Not all children can breathe properly with a cork over the trach. Your Respiratory Therapist will make sure your child is ready to use a cork.
- In order to be able to use a cork, your child needs an uncuffed trach or the cuff of their trach must be down (no air or water in the cuff). Your child must be able to breathe through their nose and mouth with the tube blocked. This is because the trach will be covered when the cork is on, and no air can flow through it.
- If a cork is an option for your child, your ENT doctor and Respiratory Therapist will give you a prescription for a cork and teach you how to safely use the cork.



Before using a cork, make sure your child's cuff is down, with no air or water in it.

Always take the cork off before re-inflating the cuff.

Speaking valves

A speaking valve is a device that fits on the end of the trach tube. It is a one-way valve that lets air enter the trach tube as your child breathes in. The valve closes when your child breathes out so the air goes out through the nose and mouth.

The speaking valve may allow your child to make sounds or speak and swallow. Other benefits will be discussed in Module 4.

Speaking Valve (Passy-Muir Brand)



To use a speaking valve:

- Your child needs an uncuffed trach or the cuff of their trach must be down (with no air or water in the cuff).
- Your child must be able to breathe out using their upper airway, as the speaking valve prevents air from leaving through the trach when they breathe out.

Not all children with tracheostomies are able to use a speaking valve. Your ENT doctor and Respiratory Therapist will give you a prescription and teach you how to use and care for a speaking valve if this is an option for your child.



Before using the speaking valve, make sure your child's cuff is deflated (no air or water in the cuff) or the cuff is down.

Always take the speaking valve off before re-inflating the cuff.

How do I care for the stoma?

The **stoma** is the hole made in your child's trachea that is kept open with the trach tube. The care of the stoma includes inspecting and cleaning the skin around and on the opening of this hole. Stoma care helps to prevent infection.

Stoma care involves:

1. Removing the old gauze dressing.
2. Checking the stoma for signs of infection (redness, swelling and pain).
3. Cleaning the stoma.
4. Putting on a new gauze dressing.
5. Checking trach ties and neck.



**Stoma care is done 2 times a day.
Once in the morning and once at night (before bedtime).
You can always complete stoma care more often as needed.**

You will need to do stoma care more often if you notice signs of infection. Your doctor or Respiratory Therapist will help you decide how often it is needed.

Checklist for Stoma Care

☑	Steps
☐ 1.	Gather supplies: <ul style="list-style-type: none"> ✓ Disposable gloves ✓ Sterile distilled water (or sterile normal saline) ✓ Cotton tipped sticks ✓ Sterile trach dressings ✓ Suction equipment
☐ 2.	Help your child get into a comfortable position that helps to expose the trach and stoma. For example, place a pillow or blanket under their shoulders.
☐ 3.	Wash your hands well.
☐ 4.	Put on clean gloves.
☐ 5.	Make sure you are in a comfortable position, so you can easily see and reach the trach.
☐ 6.	Suction the trach before stoma care if needed.
☐ 7.	Take off the old dressing around the stoma, look at the discharge on the dressing and throw it in the garbage. <p>Important</p> <ul style="list-style-type: none"> • Dirty dressings and swabs may cause infections so they should be thrown away carefully. • Wrap them in a plastic or paper bag and then put them in the garbage.
☐ 8.	Check the skin around the stoma and the mucous. <p>Make sure to note:</p> <ul style="list-style-type: none"> ✓ The colour of the skin for redness or discharge around the stoma ✓ Any extra growth of tissue, which is called granulation tissue or a granuloma (see page 45 for more information). ✓ The colour of the mucous ✓ The amount of mucous ✓ If there is an unpleasant smell

	<p>Important</p> <p>Tell your health care provider if you notice:</p> <ul style="list-style-type: none"> • Redness or swelling • Creamy yellow or green mucus • Crusting, dry mucus • A bad smell • Pain or tenderness around the stoma • A new granuloma or change in the size of your child’s previous granuloma.
<input type="checkbox"/> 9.	Pour sterile distilled water or normal saline into the cotton tipped stick packaging. Use 4 or more as needed.
<input type="checkbox"/> 10.	Moisten any dried or crusted areas with sterile water or normal saline. Let it sit before going on to the next step.
<input type="checkbox"/> 11.	<p>Remove the moistened cotton tipped stick from the package. Begin to clean the stoma by using a single sweep from the stoma outwards.</p> <p>Important</p> <p>Cleaning outwards from the stoma (cleanest area) to the skin around it (dirtiest area) ensures that you do not move bacteria into the stoma. This helps to prevent infections.</p> <p>Throw the cotton-tipped stick in the garbage.</p>
<input type="checkbox"/> 12.	Continue to use new moistened cotton-tipped sticks to clean around the stoma (from the center outward) until the entire area has been cleaned.
<input type="checkbox"/> 13.	Use dry cotton-tipped sticks (4 or more) to sweep over the area (in the same way that you cleaned), until the stoma site is completely dry.
<input type="checkbox"/> 14.	<p>Slowly and carefully insert a new sterile gauze dressing underneath the tube and around the stoma site.</p> <p>Be careful not to twist the trach tube or pull on the flange.</p>
<input type="checkbox"/> 15.	Throw away the packages and used cotton-tipped sticks in the garbage.
<input type="checkbox"/> 16.	Take off gloves and wash hands well.
<input type="checkbox"/> 17.	Gather clean supplies so you are ready for the next time you do stoma care.

Care of Granulomas

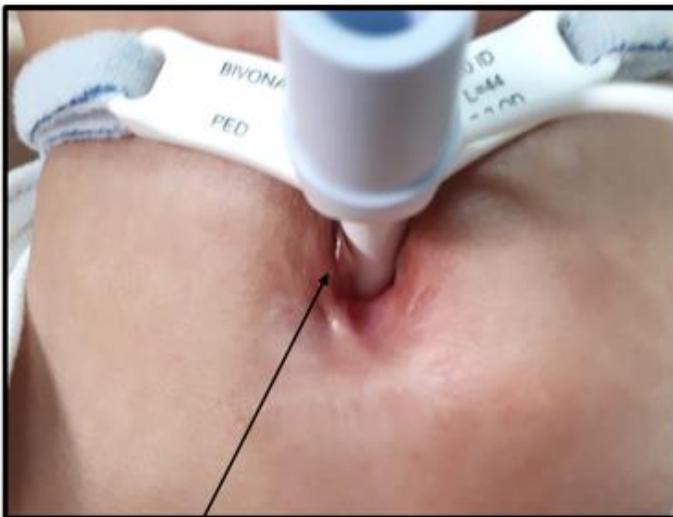
A **granuloma** is an extra growth of tissue which is called granulation tissue. A granuloma may grow on the stoma when the skin is irritated, the trach tube rubs on the stoma (creating friction) or there is excess moisture.

Granulomas:

- Do not have nerve endings and therefore they have no feeling and are not sore or painful.
- Typically appear red or pink and moist.
- May bleed if they become irritated because they have a lot of tiny blood vessels called capillaries.
- Can block the stoma opening if they grow too big.
- Can grow inside the trachea and your ENT doctor will assess for these at regular follow-up appointments.

Granulomas are common in children with tracheostomies. Your health care provider can show you how you can treat a granuloma. Treatment involves decreasing the size of the granuloma so that it does not block the stoma.

Examples of granulomas



Granuloma on stoma (with trach tube)



Granuloma on stoma (without trach tube)

How do you treat a granuloma?

Your health care provider will assess your child's granuloma and decide if the granuloma needs to be treated. Sometimes your health care provider you will not need to treat the granuloma right away. The treatment for granulomas is to apply silver nitrate a medication that is applied on the granuloma.

Silver Nitrate is a chemical that is safe to use on your child's granuloma. Silver nitrate is applied using a cotton tipped applicator stick and it can shrink the size of the granuloma and prevent it from growing. Your health care team will apply the silver nitrate or may teach you how to use silver nitrate safely.

Care of skin irritation around the stoma

It is important to inspect the stoma and surrounding skin often to check for redness and other types of skin irritation. Irritation can be prevented by good stoma care and keeping the skin clean and dry.

Sometimes irritation can develop in the form of a rash. One common rash, **a yeast infection**, occurs when yeast grows around the stoma. A yeast infection looks like a red blotchy rash and sometimes you can see large red dots. This rash can also look shiny and could ooze or look crusty.



Do not apply creams or ointments to the stoma and surrounding skin without direction from your doctor. These creams could make your child's skin worse. Your doctor may prescribe a cream to help heal the skin if needed.



Please contact your health care provider if you notice a new granuloma or signs of a rash or skin irritation such as a yeast infection.

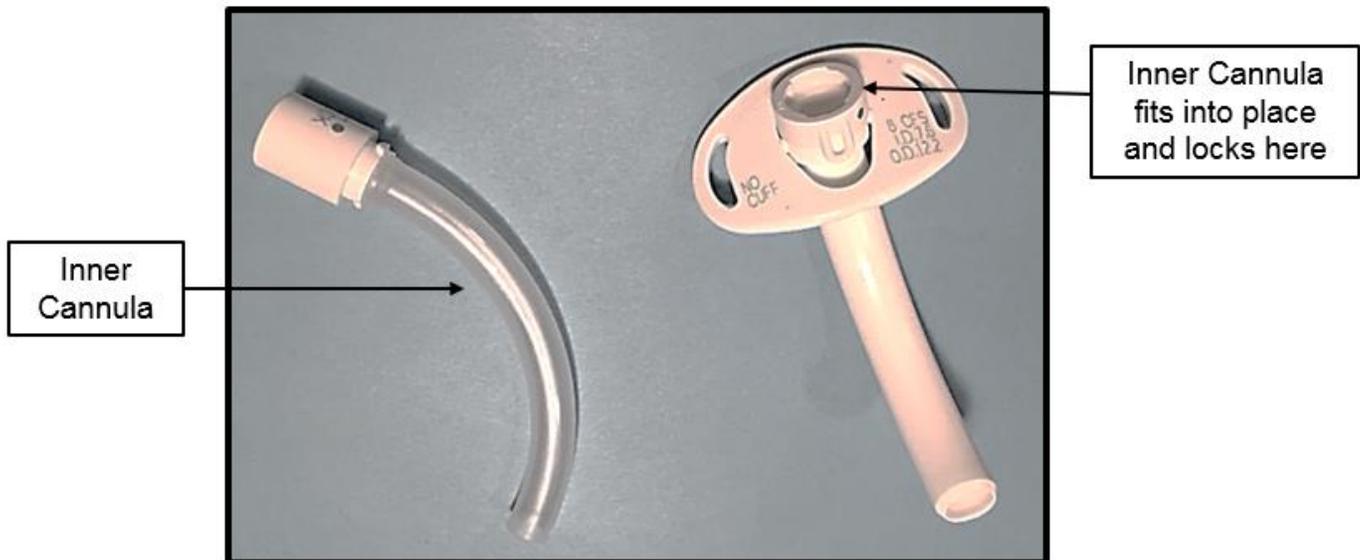
How do I care for the inner cannula?

The **inner cannula** is the smaller tube that fits inside of the trach tube. It can go in and out of the trach tube. Not all tracheostomy tubes have an inner cannula but those that do will have specific care.

Clean the inner cannula to help prevent infections:

- You must clean or replace the inner cannula at least once a day.
- If there is a lot of mucous in the inner cannula, you may need to clean it more often.

Non-disposable inner cannula



Disposable inner cannula



Checklist for the care of a non-disposable inner cannula

☑	Steps
☐ 1.	Gather supplies <ul style="list-style-type: none"> ✓ Clean inner cannula ✓ Disposable gloves ✓ Cotton-tipped sticks ✓ Container for cleaning ✓ Clean small plastic bags or a dry container for storage ✓ Suction equipment ✓ Go-Bag ✓ Hydrogen peroxide 3% ✓ Sterile water
☐ 2.	Pour equal parts (1:1) sterile water and hydrogen peroxide (3%) into a container for cleaning.
☐ 3.	Wash your hands and put on clean gloves.
☐ 4.	Suction your child's trach if needed.
☐ 5.	Hold the flange and remove the dirty inner cannula by turning it to the left (in unlocked position) and gently removing it. Place it into the cleaning container (with the hydrogen peroxide and sterile distilled water solution).
☐ 6.	Insert a clean inner cannula and lock by turning it to the right until the two blue dots line up and it locks the hub into place.
☐ 7.	Use gauze to gently remove mucous from the cannula. Do not brush or scrub the inner cannula. You may want to pour the solution through the inner cannula to loosen dried-on mucous. Do not soak the inner cannula in this solution.
☐ 8.	Rinse the inner cannula with sterile water to remove all of the hydrogen peroxide.
☐ 9.	Inspect the tube for cracks or breaks in the tube and the locking mechanism (if applicable). If there are cracks or breaks the inner cannula should be discarded.
☐ 10.	Dry the outside of the inner cannula with clean dry gauze. Tap it against the gauze to remove any drops of water from inside the cannula and let it air dry.

	<p>Important Do not whip or shake the cannula to remove drops as this can spread drops into the air.</p>
<input type="checkbox"/> 11.	Once dry, store the now clean inner cannula in a small clean plastic bag or dry container.
<input type="checkbox"/> 12.	Throw out all soiled supplies, along with the dirty water and hydrogen peroxide solution.
	<p>Important Change the water and hydrogen peroxide each time.</p>
<input type="checkbox"/> 13.	Wash the container in soap and water. Rinse well. You can wash the containers on the top shelf in the dishwasher.
<input type="checkbox"/> 14.	Take off gloves and wash hands well.
<input type="checkbox"/> 15.	Prepare clean supplies for the next use.

Checklist for the care of a disposable inner cannula

<input checked="" type="checkbox"/>	Steps
<input type="checkbox"/> 1.	Gather supplies <ul style="list-style-type: none"> ✓ Disposable inner cannula ✓ Disposable gloves ✓ Suction equipment ✓ Go-Bag
<input type="checkbox"/> 2.	Wash your hands and put on clean gloves.
<input type="checkbox"/> 3.	With one hand, hold the flange at the neck steady.
<input type="checkbox"/> 4.	With the other hand, gently squeeze the snap-lock and pull the inner cannula out of the tube, using a downward motion.
<input type="checkbox"/> 5.	Discard the used inner cannula in the garbage.
<input type="checkbox"/> 6.	Remove the new inner cannula from its package.
<input type="checkbox"/> 7.	Gently squeeze the snap-lock of the new inner cannula and insert it into the tube. Release the snap-lock connector when it securely locks onto both sides of the connector rim.
<input type="checkbox"/> 6.	Make sure you have another disposable inner cannula for the next time it needs to be changed.

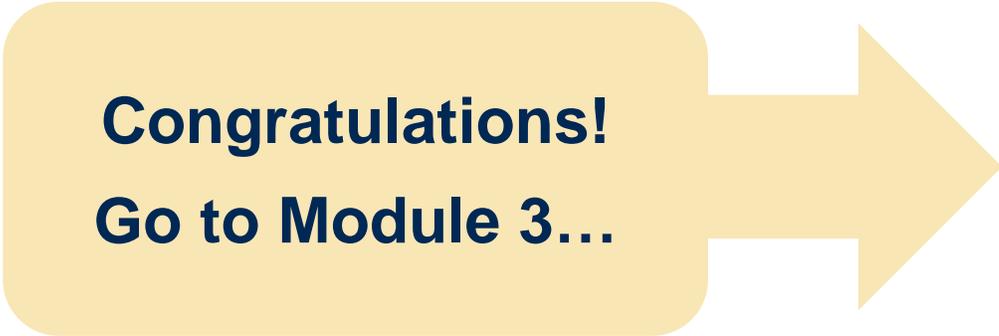
Module 2 Checkpoint

Have you reached your learning goals?

Review this list with your Respiratory Therapist:

- I can identify the parts of a trach and how they work
- I can identify the brand of trach my child uses
- I can identify the size of trach that my child needs
- I can care for my child's stoma
- I can care for the inner cannula of my child's trach (if applicable)

When you are confident that you have achieved these learning goals you are ready to go to the next module.



Congratulations!
Go to Module 3...

Module
3

Understanding how to suction your child's trach

Learning goals

When you finish this module you will be able to:

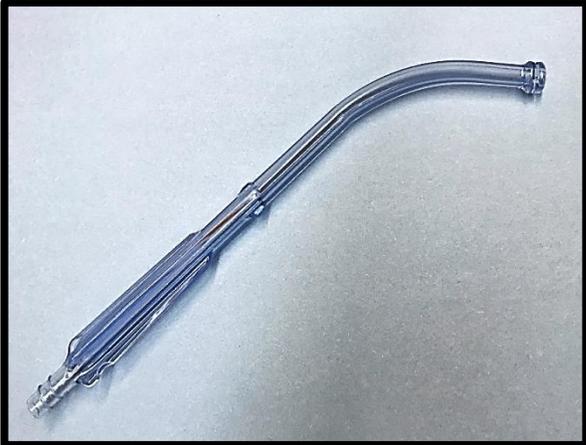
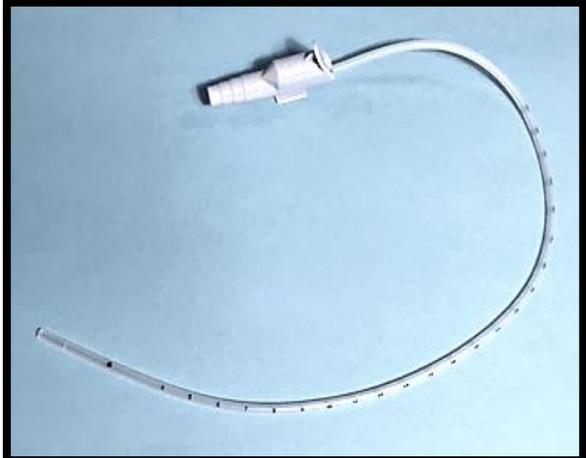
- Explain what suctioning is and why it is important.
- Describe when to suction your child's trach.
- Suction your child's trach.
- Describe the parts of suction equipment and how they are cleaned and maintained.
- Explain what is an emergency back-up syringe suction
- Describe how to collect a sputum sample



What is suctioning and why is it important?

Suctioning removes mucous from the trach tube and airway. Suctioning is very important as it helps keep the airway open. Without suctioning, the mucous can build up and could block your child's airway.

Suction catheters are long, thin tubes that are used to remove mucous from the trach, mouth and nose. Larger handheld suction devices such as **Yankauers** are also helpful to suction your child's mouth.

Type of suction device	How it is used	Picture
Yankauer	<p>A Yankauer is used to suction secretions from the mouth.</p> <ul style="list-style-type: none">• Some have a hole/port that you block with your finger to apply the suction.• Others do not have a hole/port and are set to suction constantly.	
Suction catheter	<p>A suction catheter is used to suction the mouth, nose and trach tube.</p> <p>These catheters have a thumb port. You put your thumb over the port to apply suction.</p>	

How do I suction the trach?

There are 3 ways to suction your child's trach. We will teach you how and when to use each technique. We will tell you which technique is ordered and best for your child.

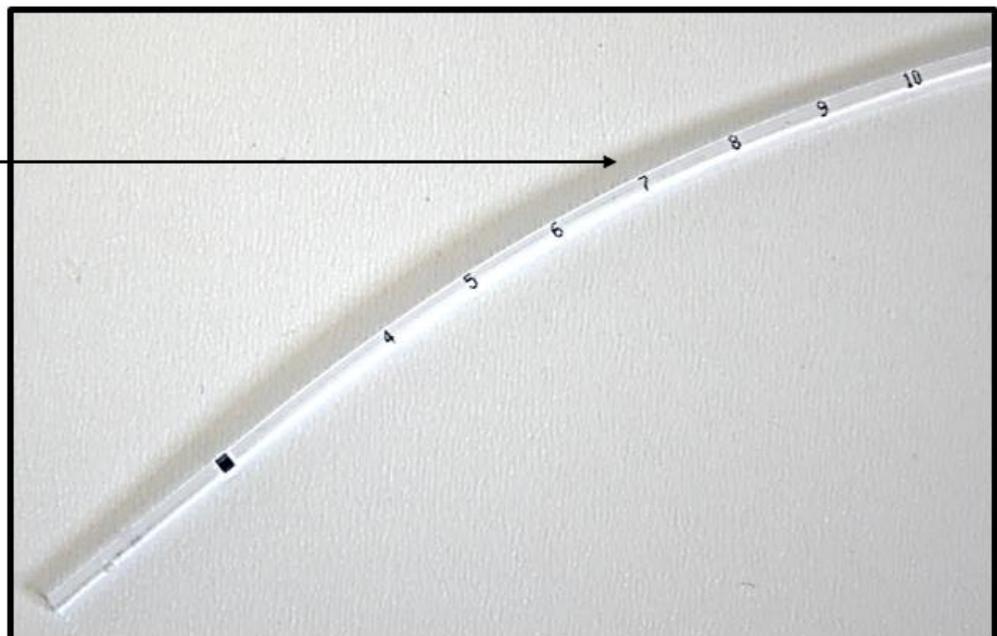
Measured suctioning

Use this technique to suction the length of the trach tube:

- How far you insert the suction catheter will depend on the length of your child's trach. The suction catheter reaches just beyond the trach tube and does not hit the carina.
- The suction depth is determined by measuring the length of the tube and plus half a cm as ordered by your health care team. Your obturator is a good guide for measuring the suction length.
- For example, if your child's tube length is 70 mm (or 7 cm), then the prescribed suction length would be 8 cm (7 cm + 1 cm = 8 cm).
- Measured suctioning is done routinely every 4 hours and can be done many times a day to clear the trach tube of secretions.

Measured Suctioning (Routine Suctioning)

For example:
you would suction to 7cm by inserting the suction catheter into the trach to the 7cm marking



Deep suctioning

Use this technique to suction beyond the trach tube and into the airway:

- Insert the suction catheter until you feel something stopping you (you will have hit the carina between the two bronchi).
- When you feel contact with the carina, pull the catheter out a bit and then apply suction.

Tip suctioning

Use this technique to suction the end of the trach tube:

- Tip suctioning can be done when you see secretions at the end of the trach.



NEVER use these suction tips for tip suctioning.

Only a suction catheter should enter your child's trach when suctioning.



When do I suction my child's trach?

Your child needs to be suctioned often to remove mucous and make sure the trach stays open. Suctioning is important to prevent mucous build-up.

Suction your child's trach at least once every 4 hours.

It is also good to suction your child's trach first thing in the morning and right before they go to bed. Your child will give you clues when they need to be suctioned.

Your child needs to be suctioned when:

- ✓ They are coughing a lot and are not able to cough up mucous
- ✓ They are having trouble breathing (they look short of breath or they tell you they are having trouble breathing)
- ✓ Their breathing sounds wet or like they are gurgling or wheezing
- ✓ You can feel vibrations when you place your hands on your child's chest (this usually means there are lots of secretions and mucous in the chest)
- ✓ You see mucous in the trach tube
- ✓ There is an unexplained decrease in oxygen saturations (if your child is on an oximeter to measure oxygen saturation)
- ✓ They ask to be suctioned

What risks are possible with suctioning?

As suctioning is necessary for your child, you need to be aware of these possible risks:

- Infection
- Damage to the trachea
- Decreased oxygen levels
- **Vagal response**, which can lower your child's heart rate or blood pressure

To reduce these risks, we will teach you the correct techniques and depth required for suctioning.

Checklist for suctioning a trach

☑	Steps
☐ 1.	Gather supplies: <ul style="list-style-type: none"> ✓ Disposable gloves ✓ Disposable suction catheters of the correct size ✓ Suction machine (with charge) and tubing ✓ Sterile distilled water ✓ Plastic bag for disposal of materials
☐ 2.	Confirm that the suction equipment is set-up and working properly. Check that the: <ul style="list-style-type: none"> ✓ machine is on ✓ machine is plugged in or has battery power for suctioning ✓ connections are all tight and properly secure ✓ suctioning tubing is properly attached and you feel suction at the end of the tubing ✓ suction pressures are correct
☐ 3.	Make sure your child is positioned appropriately and is comfortable.
☐ 4.	Wash hands well.
☐ 5.	Check that the catheter is the correct size and open the catheter packaging. Leave the catheter in the package while you attach it to the suction tubing.
☐ 6.	Put on clean gloves.
☐ 7.	Take the catheter out the package carefully, without touching the end of the catheter that will be inserted into your child's trach. Hold the catheter with your gloved hand to just above the prescribed length you will be suctioning to.
☐ 8.	If your child has humidification tubing, a cork or a speaking valve attached to the outside of the trach, remove them during suctioning.
☐ 9.	Insert the catheter into the trach to the prescribed length in cm (without applying suction).
☐ 10.	When you are ready to apply suction: <ul style="list-style-type: none"> • Cover the thumb port on the catheter. • Slowly move the catheter out of the trach, while twisting or rolling it between your fingers.

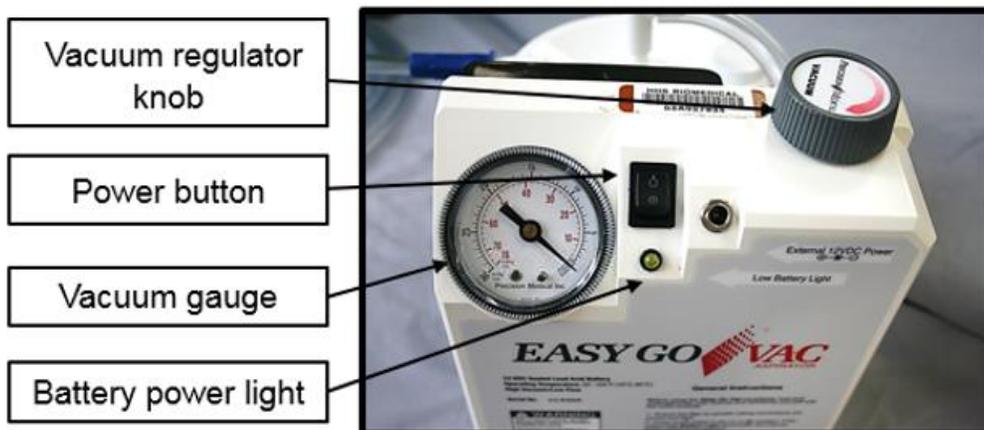
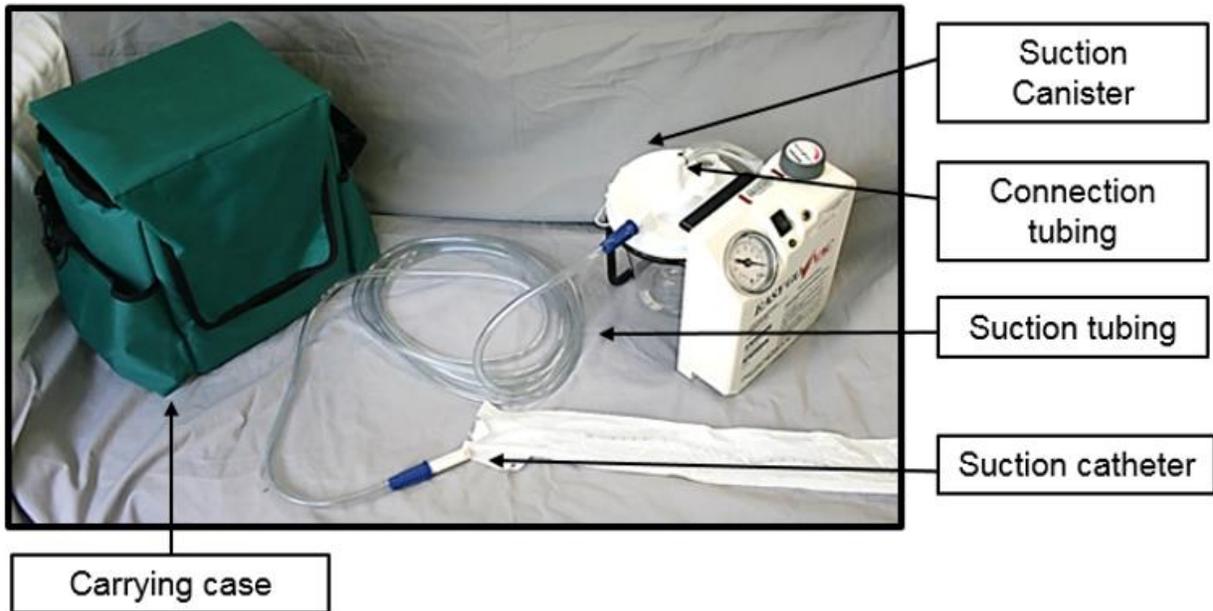
	<p>Important</p> <ul style="list-style-type: none"> • Apply suction using your thumb only when removing the catheter. NEVER when inserting the catheter. • DO NOT suction for more than 5 seconds.
<input type="checkbox"/> 11.	<p>Look at the mucus being suctioned out.</p> <p>Make sure to note:</p> <p>✓ The amount, colour, thickness and smell of the mucus</p> <p>Important</p> <ul style="list-style-type: none"> • If your child’s mucous is very thick and the suction catheter gets blocked or becomes plugged by mucous, throw it out. • Replace it with another sterile catheter, using the same techniques.
<input type="checkbox"/> 12.	<p>If the catheter is clear and clean, you can use the same catheter to suction a few times.</p> <p>Important</p> <ul style="list-style-type: none"> • Suctioning can cause your child to become short of breath. • You will need to watch your child for changes in their breathing and also watch their monitor for changes in oxygen saturations. • Make sure you allow your child to take breaths between suction attempts. • You may need to place your child back on their oxygen for a short time.
<input type="checkbox"/> 13.	<p>Place the humidification or oxygen tubing, cork or speaking valve back on the trach.</p>
<input type="checkbox"/> 14.	<p>After suctioning, you may want to use sterile distilled water to clear suction tubing. You can do this by placing the catheter in the water and applying suction to clear any thick mucus in the tubing.</p>
<input type="checkbox"/> 15.	<p>Put the suction catheter in the garbage. Never reuse or store the catheter after you have used it to suction. Dispose of your gloves.</p>
<input type="checkbox"/> 16.	<p>Turn off the suction machine.</p>
<input type="checkbox"/> 17.	<p>Wash your hands well.</p>
<input type="checkbox"/> 18.	<p>Make sure the suction machine and suction catheters are near your child for the next suction session.</p> <p>Always have this equipment ready in case you need it quickly.</p>

What suction equipment do I need at home?

Your Respiratory Home Care Company will provide the suction equipment you will use at home. Before you leave the hospital, we will teach you how to suction using this equipment.

Suction equipment:

This picture shows the parts of suction equipment. Your equipment will have the same parts, but they may look slightly different.



How the equipment works

Filter and connection tubing	<ul style="list-style-type: none">• A small amount of tubing attaches the suction canister to the suction device.• This tubing has a filter which prevents fluid from moving past this section of tubing.
Suction canister	<ul style="list-style-type: none">• A container that holds the mucous that is suctioned.• Canisters can be disposable or reusable.
Suction tubing	<ul style="list-style-type: none">• This tubing runs from the suction canister to the suction device. The device may be a suction catheter or a Yankauer for mouth suction (shown in the picture).
Power adapters	<ul style="list-style-type: none">• The cord of the power adaptor runs from the side of the suction equipment to the wall or to your car outlet.• Make sure the equipment is always charged. A green light shows it is fully charged.
Vacuum gauge	<ul style="list-style-type: none">• This gauge shows the suction pressure settings of the equipment.• Before suctioning, you can set or change the pressures on this gauge by turning the Vacuum Regulator Knob on the side of the device.

Changing suction pressure

Before suctioning your child, check to make sure the suction pressures are set correctly.

1. Block the connective tubing with a gloved thumb.
2. Adjust the Regulator Knob until the ordered suction pressure is reached.
3. Check that the dial on the vacuum gauge points to the correct pressure setting.
4. If the setting is not correct, turn the knob to the ordered suction pressure.

My child's Suction settings:

_____ mmHg

Equipment Checkpoint:

Always keep the following supplies with your Home Suction Equipment:

- ✓ Gloves
- ✓ Extra suction catheters
- ✓ Extra suction tubing
- ✓ Go-Bag
- ✓ Car charger (if applicable)



Make sure that your suction machine is always plugged in and ready to suction.

How to clean and maintain the equipment

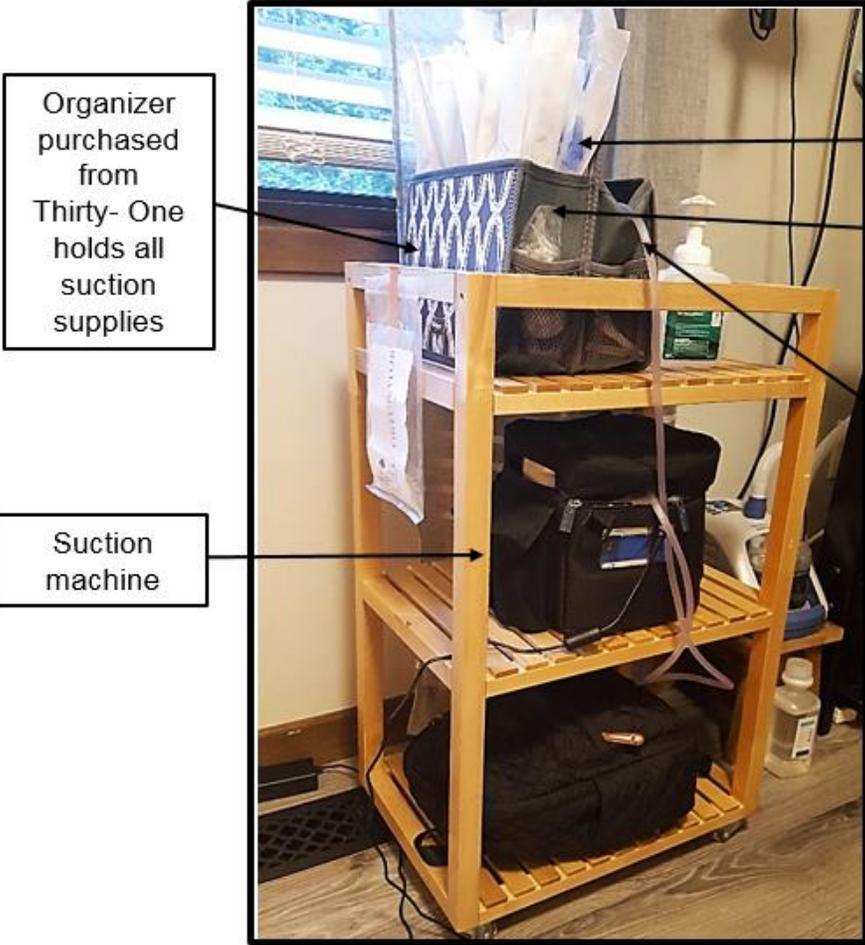
Suction tubing	<ul style="list-style-type: none">• Clear the secretions from the tubing after suctioning. This prevents secretions from drying and blocking the tube.• Clear secretions by suctioning a small amount of sterile water through the tubing. Only use this water for suctioning.• Change the connective tubing as needed.
Suction canister	<ul style="list-style-type: none">• Empty the suction canister every day and when it becomes full. You can empty this fluid into the toilet.• Rinse the canister with soap and water each time that you empty it.
Filter	<ul style="list-style-type: none">• Change the filter attachment every 2 months (or as the manufacturer recommends) or more often when it is blocked, wet or looks dirty.
Suction machine	<ul style="list-style-type: none">• Keep the machine free of dust. Wipe it clean at least once a month or more often as needed.

For more information about your child's suction equipment, read the instruction manual that came with the equipment

Examples of suction set-ups



- Suction catheters
- Suction tubing
- Emergency back-up syringe suction
- Suction machine



Organizer purchased from Thirty- One holds all suction supplies

Suction machine

- Suction catheters
- Pockets for extra supplies
- Suction catheter and tubing in this pocket

What is an Emergency Back-up Syringe Suction?

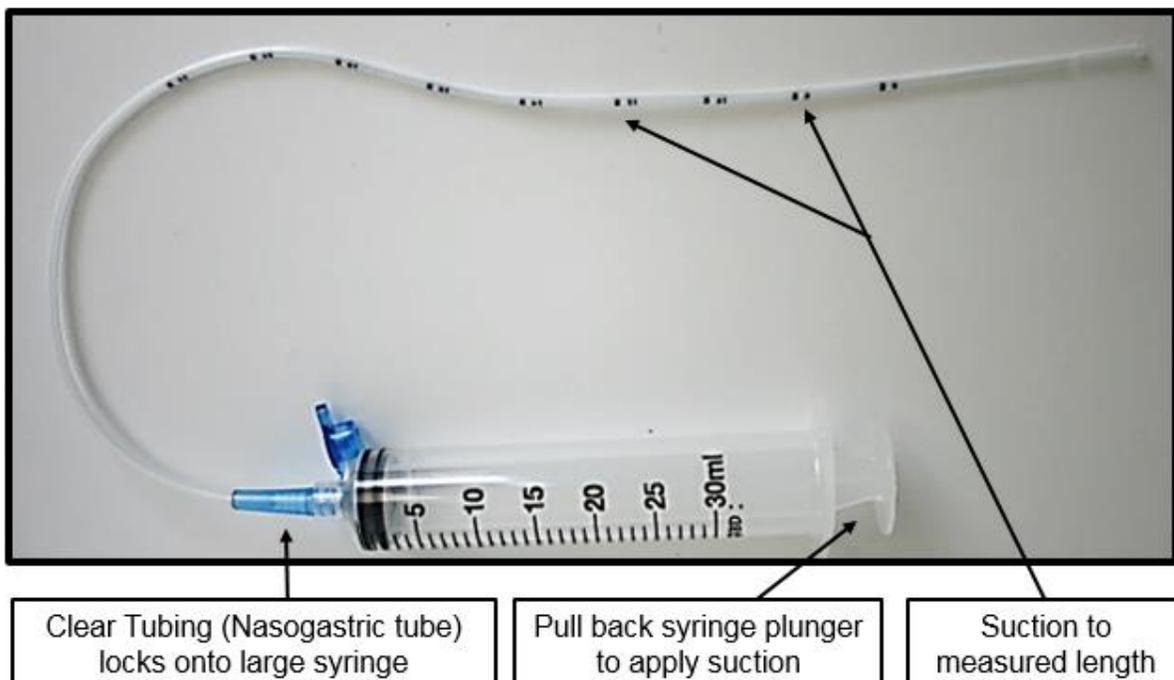
An **Emergency Back-up Syringe Suction** is a simple device that can be used when your suction unit is not working properly. This device is made of a clear tube attached to a large syringe. The syringe will be either a 20 mL or 30 mL empty syringe. Your respiratory therapist will set this up for you and teach you how to use it.

How does it work?

To suction, insert the clear tubing to the prescribed measured length into the tracheostomy tube. The tubing is slightly more flexible than your suction catheter so you may have to guide it gently into the tracheostomy tube to the same length you would when using a suction catheter. After inserting the tubing to the prescribed length, pull back on the syringe which will create suction and will pull back secretions into the tubing and syringe. Use the same practices as you would for suction catheter suctioning to keep the tube clean and give your child breaks between suctioning.

If you have to use this device in an emergency please let your health care provider know and they can provide you with a new device to add to your Go-Bag. Please do not discard until you have received a new one. Call your respiratory home company right away to replace your suction equipment.

Emergency Back-up Syringe Suction



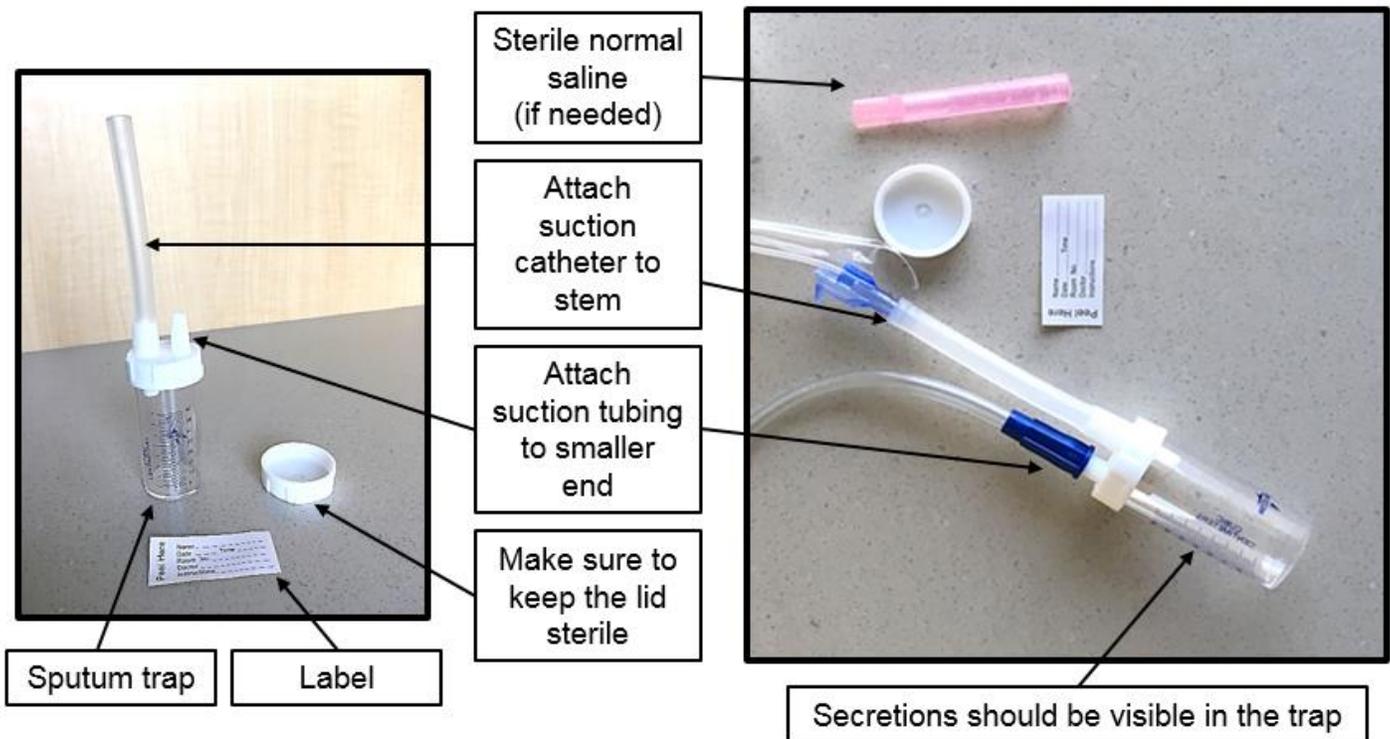
What is a sputum sample and how do I collect one?

Your health care provider might ask you to collect a **sputum sample** so that your child's trach secretions can be tested in the lab. A sputum sample is collected by suctioning your child's trach secretions or mucous into a **sputum trap** that you bring to the hospital, lab or clinic to be tested for infection.

You might be asked by your health care provider to collect a sputum sample from your child's trach when your child:

- has a fever
- has changes in the their mucous/sputum
- starts to show signs of a respiratory infection (see page 25)

Parts of a sputum trap



Before you bring your sample in for testing, fill out the label with:

- ✓ your child's name,
- ✓ that it is a sputum sample
- ✓ date and time of collection

Checklist for collecting a sputum sample

☑	Steps
☐ 1.	Gather supplies: <ul style="list-style-type: none"> ✓ Disposable gloves ✓ Disposable sterile suction catheters of the correct size ✓ Suction machine (with charge) and tubing ✓ Sputum trap ✓ Sterile normal saline (if applicable)
☐ 2.	Confirm that the suction equipment is set-up and working properly.
☐ 3.	Make sure your child is in the right suctioning position.
☐ 4.	Wash hands well.
☐ 5.	Put on clean gloves.
☐ 6.	Open the package of the sputum trap. Keep the lid sterile by placing upright on a surface and out of reach of your child. Check that the top of the trap is secure by tightening the top.
☐ 7.	Open the sterile suction catheter packaging and attach it to the sputum trap. Leave the catheter in the package.
☐ 8.	Attach the suction tubing to the plastic stem on the sputum trap.
☐ 9.	Take the catheter out of the package carefully, without touching the end of the catheter to keep it sterile.
☐ 10.	If your child has humidification tubing, an HME, a cork or a speaking valve attached to the outside of the trach, remove it before suctioning.
☐ 11.	Suction your child's trach so that secretions enter the sputum trap and repeat as needed.
☐ 12.	If you can't see secretions in the sputum trap after suctioning, then squeeze sterile saline into the sterile lid and use the suction catheter to suction up the saline so that the secretions enter the sputum trap.
☐ 13.	Place the lid on the sputum trap and tighten it. DO NOT touch the inside of the lid to keep it sterile.
☐ 14.	Label the sputum sample with your child's name, date and time collected and write that it is a trach sputum sample.
☐ 15.	Take to the lab as soon as possible. The sputum trap can be stored in the fridge for 24 hours if you are not able to get to the lab that day.
☐ 16.	Wash your hands well.

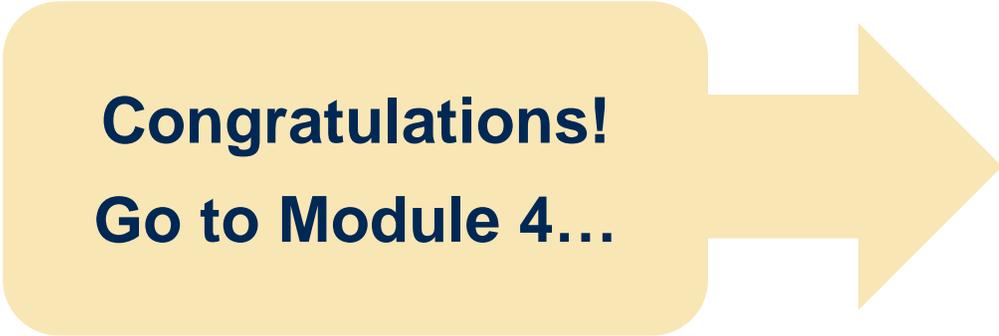
Module 3 Checkpoint

Have you reached your learning goals?

Review this list with your Respiratory Therapist:

- I can explain what suction is and why it is important
- I can describe when to suction my child's trach
- I can suction my child's trach
- I can describe the parts of my home suction equipment
- I can explain what is an emergency back-up syringe suction
- I can describe how to clean and maintain the equipment

When you are confident that you have achieved these learning goals you are ready to go to the next module.



Congratulations!
Go to Module 4...

Module 4

Understanding humidification equipment and speaking valves

Learning goals

When you finish this module you will be able to:

- Explain what humidification is and why it is important
- Identify the parts of home humidification equipment
- Use humidification equipment
- Make sterile distilled water
- Explain what a speaking valve is and how it works (if applicable)
- Help your child use a speaking valve (if applicable)



What is humidification and why is it needed?

Humidification warms and moistens air. Normally the air we breathe is warmed and moistened by our nose and mouth when we breathe in.

When your child has a trach, the air does not enter the nose or mouth. It goes directly into the trach without being humidified. Without added moisture, your child's mucus and secretions can become thick and hard to suction or cough out.

Types of humidification

There are 3 types of humidification:

- Heat Moisture Exchanger (HME)
- Airvo Heated Humidifier
- Cool-mist Humidification

The type of humidification you use will depend on the humidity needs of the trach and the time of day. You should never use an HME at the same time as another type of humidity.

Heat Moisture Exchanger (HME)

- A HME (sometimes called a Humid-vent) is an attachment that fits on the end of the tracheostomy tube.
- A HME traps the heat and moisture in the air that your child breathes out. With the next breath in, air passing through the HME picks up this heat and moisture and delivers it to the lungs.
- HMEs come in various shapes and sizes. They are usually used during the day when your child is not using other types of humidification equipment.





HME
(Heat moisture
exchanger)

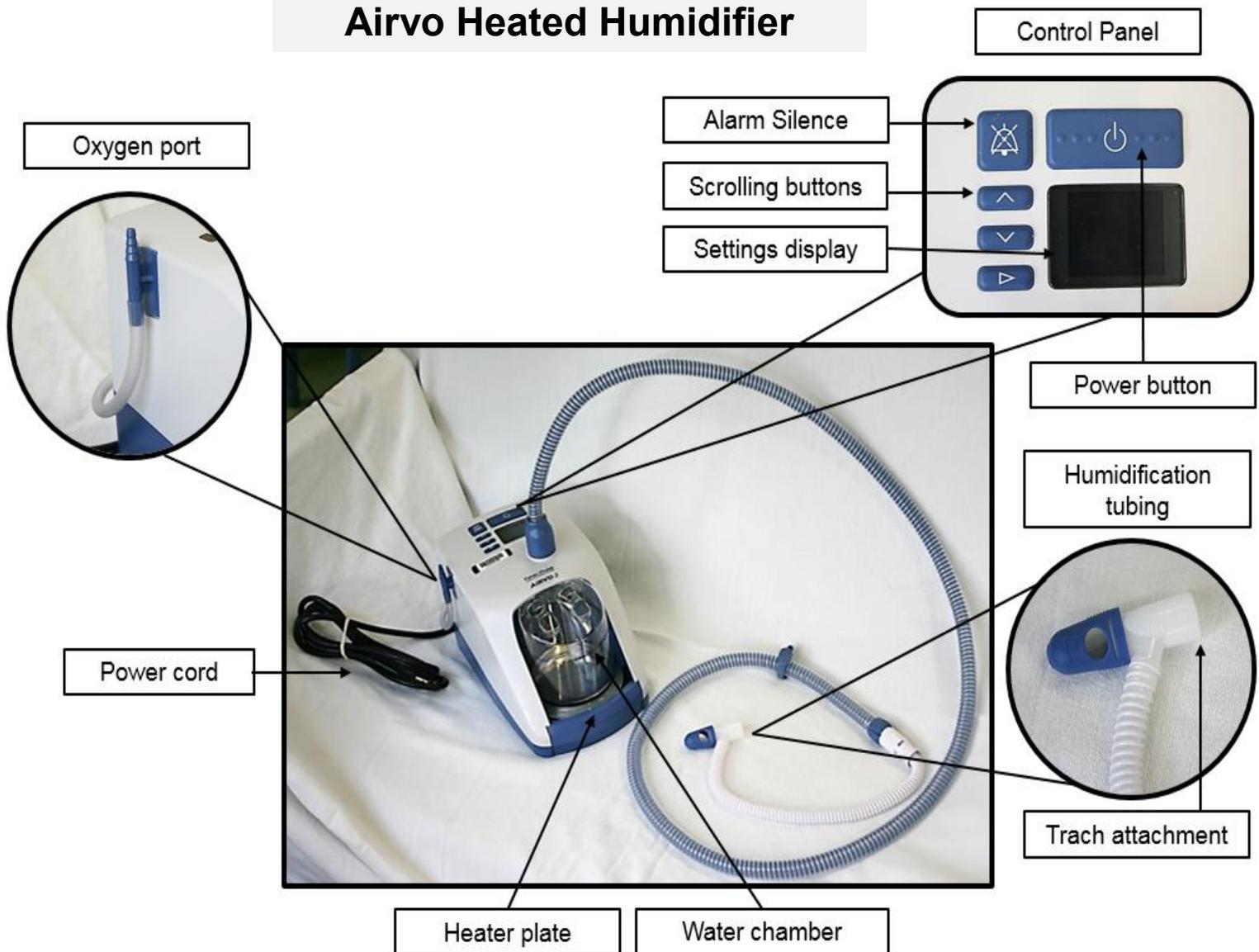
When your child is not using their HME, their trach must be humidified by using an Airvo heated humidifier or a Cool-mist humidification system. An Airvo provides heated humidification and Cool-mist provides room temperature humidification is not heated.

Airvo Heated Humidifier

An Airvo unit works by passing air over heated water. This makes the air warm and moist before it is sent through a tube to the opening of your child's trach. You can attach oxygen tubing to this humidification machine and change the amount of oxygen based on your child's oxygen needs as ordered.

Use an Airvo when your child is sleeping, has thick secretions, or when they are going to stay in one spot.

Airvo Heated Humidifier



How the Airvo works

Airvo control panel	<ul style="list-style-type: none"> • These buttons control the temperature of the humidification. • This window shows you the current temperature setting.
Water chamber	<ul style="list-style-type: none"> • Holds the sterile water used for humidification.
Heater plate	<ul style="list-style-type: none"> • Heats the water to the set temperature. • The water chamber sits on top of the heater plate.

Oxygen port	<ul style="list-style-type: none"> • Oxygen tubing is attached to this port if oxygen is needed with humidification.
Airvo humidification tubing	<ul style="list-style-type: none"> • The humidified air moves from the Airvo unit to your child through the humidification tubing. • This tubing is connected to your child's trach through a tracheostomy interface or a tracheostomy mask that goes over the trach.



The humidifier should always sit lower than:

- ✓ your child's head
- ✓ the level of the head of your child's bed or crib

Equipment Checkpoint

Make sure you always have these supplies with your Home Humidification:

- ✓ Gloves
- ✓ Extra sterile water
- ✓ Extra tubing
- ✓ Extra interface

Changing the temperature of the water

- Change the temperature of the humidification by using the arrows on the Airvo. The temperature will depend on your health care team's instructions and what is comfortable for your child.
- When you turn on the Airvo, it may take a little time to warm up to the desired temperature.
- The water temperature in the chamber can change (depending on the room temperature, heaters, fans or blankets) to make sure your child's humidification continues to be the right temperature.

Filling the water chamber with sterile water

- Humidification equipment works best when the right amount of sterile water is in the water chamber. Most water chambers have a fill line.
- **Fill the Airvo humidification unit with enough sterile water to reach the fill line.**
- You may have to fill the chamber often.
- Some water chambers fill differently. We will teach you how to fill the water chamber of your humidification equipment.

For more information about your child's humidification equipment, read the instruction manual that came with the equipment.



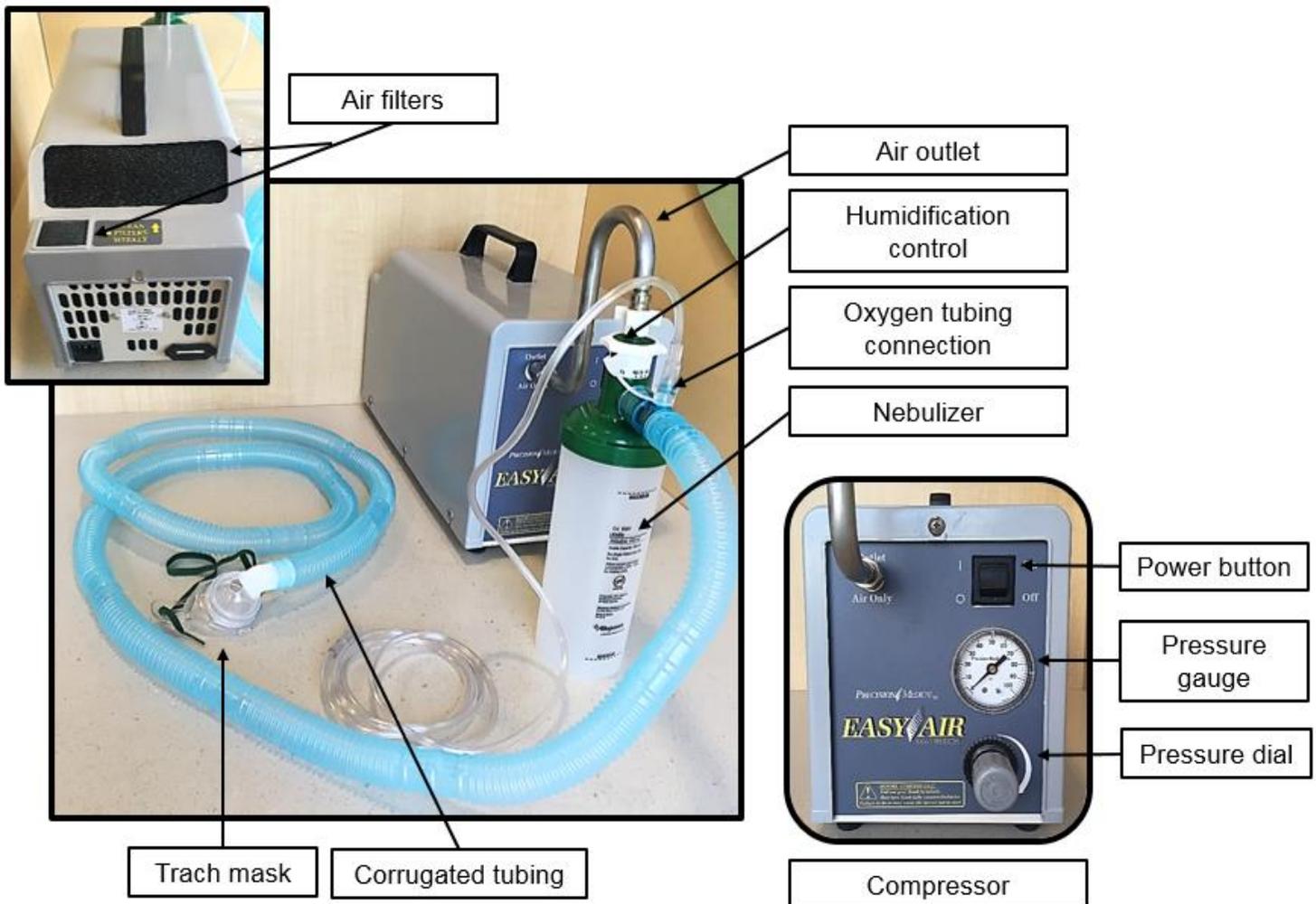
Cool-Mist humidification

Cool-mist humidification creates humidification through the use of a compressor and a nebulizer:

- A compressor uses pressure to push the air to the nebulizer.
- A nebulizer is a device that holds sterile water and creates a mist or an aerosol that passes through tubing to a trach mask over your child's trach.

You can attach oxygen tubing to this humidification machine and change the amount of oxygen based on your child's oxygen needs as ordered.

Use Cool-mist humidification when your child is sleeping, has thick secretions, or when they are going to stay in one spot.



How Cool-mist humidification works

Compressor	<ul style="list-style-type: none">• The compressor controls are located on the front of the machine.• The pressure dial allows you to set the pressures as directed by your home care company. You can see the pressures on the pressure gauge.
Air outlet	<ul style="list-style-type: none">• This metal connector attaches the compressor to the nebulizer (high-volume).
Nebulizer	<ul style="list-style-type: none">• Nebulizes sterile water by turning the water into a mist or an aerosol.• Has an oxygen connector so that oxygen tubing can be attached to the humidification (if your child requires oxygen). The oxygen tubing would be attached to a oxygen concentrator or cylinder.• Has a humidification control that adjusts the humidity and is set by your home care company.
Corrugated tubing	<ul style="list-style-type: none">• The air moves from the compressor bypasses the nebulizer which add humidity and continues to your child's trach through the corrugated tubing.• This tubing is connected to your child's trach through tracheostomy mask that goes over the trach.
Air filters	<ul style="list-style-type: none">• There are 2 air filters on the back of the compressor that help to filter the air.

Filling the high-volume nebulizer with sterile water

- Make sure that the high-volume nebulizer is filled with sterile water.
- The canister has a minimum fill line towards the bottom and a maximum fill line towards the top.
- You may have to fill the chamber often to keep the sterile water level between these 2 lines.

For more information about your child's humidification equipment, read the instruction manual that came with the equipment or contact your home care company.

Making sure your child is well-hydrated

- It is important that your child is well-hydrated.
- Staying well-hydrated helps keep your child's mucus thin. If it gets too thick, secretions may build up in the trach tube and could block the tube.
- Your child's health care team will tell you how much fluid child should have each day. If your child has a G-tube or GJ-tube, they may order extra water flushes.
- You can tell if your child is well-hydrated by checking their urine. Note the normal colour of your child's urine and how often they usually pass urine (pee or wet diapers). If your child is passing urine less often or the urine is dark-coloured, they may not be getting enough fluids (and are dehydrated).



How do I make sterile distilled water?

All water used for trach care must be sterile (free of all germs) to help prevent infection.

You must sterilize distilled water to make sure it is free of germs and safe to use for trach care.

You will use sterile distilled water when you:

- ✓ Fill your child's humidification equipment
- ✓ Fill your child's cuffed trach (if applicable)
- ✓ Do stoma care and clean the skin around the stoma
- ✓ Clean the inner cannula of the trach (if applicable)
- ✓ Clean speaking valves or corks

Making sterile distilled water at home

**Make enough sterile water to last 2 to 3 days.
Throw out any water left over after 3 days, and make more.**

1. Choose a pan for sterilizing water. The pan must have a lid, and be large enough to boil enough water for 2 to 3 days. This pan will only be used for sterilizing water, not for cooking or other purposes.
2. Put the desired amount of distilled water in the pan and bring it to a boil. Let the water boil uncovered for 5 minutes.
3. Turn off the heat and cover the pan. Allow the water to cool with the lid on. Do not use ice to cool down the water.
4. When the water has cooled, pour it into a sterile container (see page 79 for more information on sterilizing containers).
5. Label the container with the date and time that the water was made.
6. Keep the sterile distilled water with your child's other trach care supplies. It does not need to be refrigerated.

To sterilize containers:

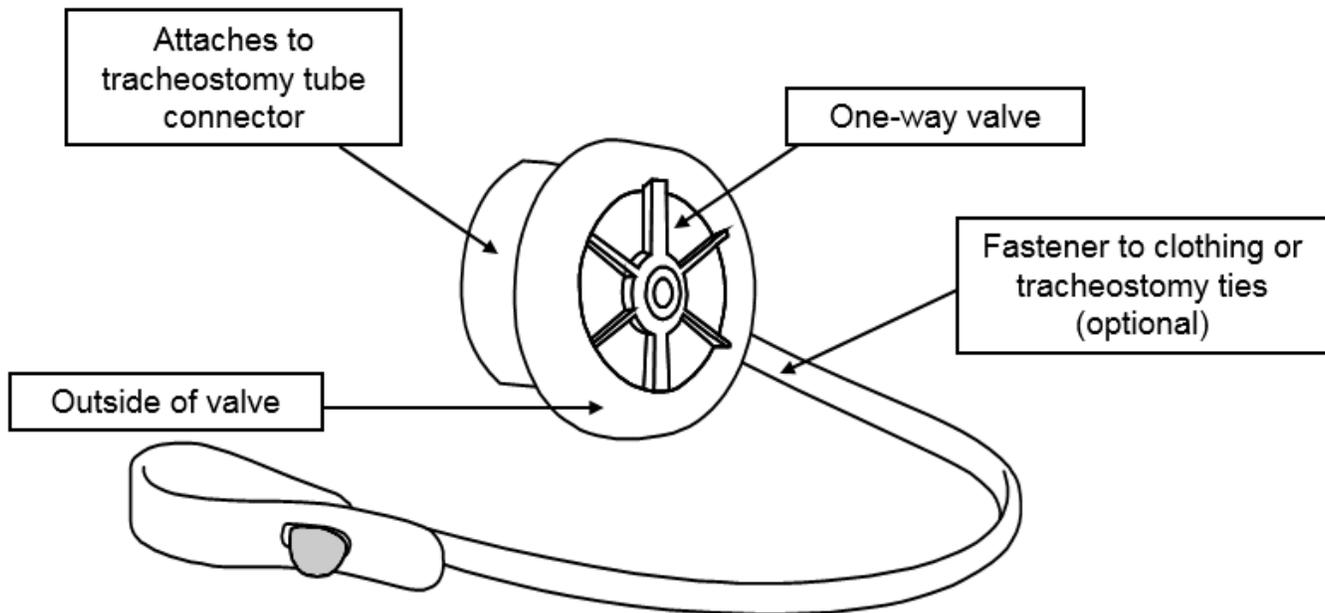
1. In a separate pan, cover the containers with water and boil them uncovered, for 10 minutes.
2. Turn the heat off, put the lid on the pan and allow it to cool.
3. When the water and containers have cooled, they are ready to use.



What is a speaking valve and how does it work?

A speaking valve is a device that can be placed on the end of the trach tube. It is a one-way valve that allows air to enter as your child breathes in.

Speaking valve (Passy-Muir Brand)



How a speaking valve works

- When your child breathes in, air enters through the speaking valve and goes to the lungs.
- When your child breathes out, the valve closes and forces the air into the upper airway. Air passes up through the trachea and past the vocal cords, making sounds and speech possible. The air then passes up and out through the mouth and nose.

For your child to be able to use a speaking valve:

- Their trach will need to be uncuffed or the cuff of their trach must be down (with no air or water in the cuff).
- They must be able to breathe out using their upper airway, as the speaking valve will prevent air from leaving the trach when the child breathes out.
- Your health care team will assess your child's readiness for a speaking valve.



Before using a speaking valve, make sure your child's cuff is deflated (there is no air or water in the cuff) or the cuff is down.

Always take the speaking valve off before re-inflating the cuff.

Who can use a speaking valve?	Who cannot use a speaking valve?
<p>Children who:</p> <ul style="list-style-type: none">• have a working upper airway• have an uncuffed trach or that can tolerate their cuff deflated• have been assessed by the ENT doctor and the RT to make sure they are able to use the speaking valve safely.	<p>Children who:</p> <ul style="list-style-type: none">• are not able to breathe through their upper airway• require the cuff of their trach to be inflated at all times• have too many and too thick secretions

Your Respiratory Therapist and health care team will let you know when they think your child might be ready for a speaking valve.

The benefits of speaking valves

- ✓ Your child may be able to make sounds or speak. Your child may be able to communicate verbally.
- ✓ Improved swallowing. Your child may be less likely to choke on food.
- ✓ Less risk of food or vomit entering the lungs (aspiration).
- ✓ Your child's appetite and sense of smell may improve.
- ✓ Your child may have a stronger cough and may not need to be suctioned as often.



Types of speaking valves

There are different brands and types of speaking valves. The most common brand we use is the **Passy-Muir**. This company makes many different types of speaking valves. These valves all come with detailed instructions and a carrying case to store the valve when it is not in use.



Checklist for using a speaking valve

<input checked="" type="checkbox"/>	Steps
Before using the speaking valve	
<input type="checkbox"/> 1.	Gather supplies: <ul style="list-style-type: none"> ✓ Speaking valve ✓ Disposable gloves ✓ Cotton-tipped sticks ✓ Suction equipment ✓ Go-Bag
<input type="checkbox"/> 2.	Check the speaking valve to make sure it is working. Gently press on each section of the valve with a cotton-tipped stick to make sure the valve opens properly. <p>Important: Always check that the speaking valve is working before using it.</p>
<input type="checkbox"/> 3.	If possible, have your child cough and suction their trach.
<input type="checkbox"/> 4.	If the trach has a cuff, completely deflate the trach tube cuff or make sure it is already deflated.
<input type="checkbox"/> 5.	Remove trach mask, HME or other accessory your child has on.
To put on the speaking valve	
<input type="checkbox"/> 6.	Gently hold onto the edges of the trach tube flange and place the speaking valve over the end of the trach tube.
<input type="checkbox"/> 7.	Twist the valve gently to the right (a ¼ turn) to make sure it is on the trach tube properly. Make sure the connection is secure.
<input type="checkbox"/> 8.	Replace the oxygen, if your child needs it. <p>Important: Every time your child uses the valve, make sure they are comfortable and breathing well with the valve on.</p>
To remove the speaking valve	
<input type="checkbox"/> 9.	To take the speaking valve off the trach tube, gently hold the flange and twist the valve, turning it to the left.
<input type="checkbox"/> 10.	Replace the humidity source. Replace oxygen if your child uses it.
<input type="checkbox"/> 11.	If your child has a cuffed trach with the cuff up, re-inflate the cuff.

Remove the speaking valve when your child:

- ✓ Becomes distressed, has increased coughing or you become concerned about their breathing
- ✓ Develops more secretions than usual
- ✓ Requires suctioning
- ✓ Requires an aerosol treatment, nebulizer or puffer
- ✓ Is sleeping or napping

To clean the speaking valve:

- Speaking valves must be cleaned every day with mild dish soap and warm water and rinsed thoroughly.
- Allow the speaking valve to air dry. When the speaking valve is dry, store it in a sealed plastic container. Some valves come with plastic storage containers.
- DO NOT use hot water, cleaning brushes or harsh cleaning products (such as hydrogen peroxide, bleach or alcohol) to clean your speaking valve as they could damage the valve.



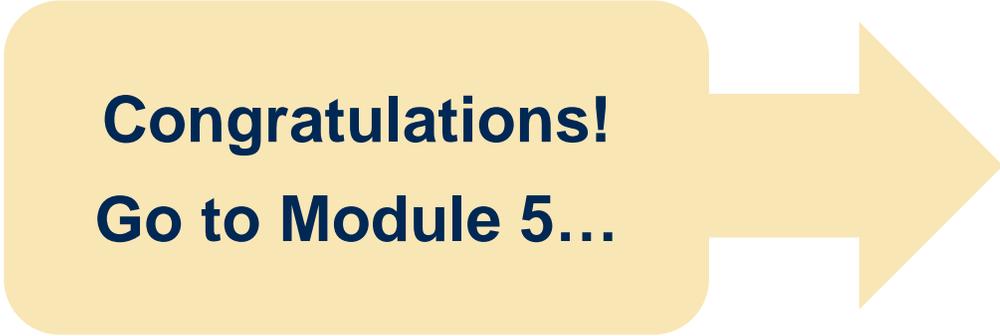
Module 4 Checkpoint

Have you reached your learning goals?

Review this list with your Respiratory Therapist:

- I can explain what humidification is and why it is important
- I can identify the parts of home humidification equipment
- I know how to use humidification equipment
- I can make sterilized distilled water
- I can explain what a speaking valve is and how it works
- I can help my child use a speaking valve (if applicable)

When you are confident that you have achieved these learning goals you are ready to go to the next module.



Congratulations!
Go to Module 5...

Module 5

Preparing your Go-bag, caring for a cuffed trach, changing trach ties and changing the trach

Learning goals

When you finish this module you will be able to:

- Explain what a Go-Bag is and the importance of each item
- Check your Go-Bag to make sure you have all the equipment needed for trach care and emergencies
- Describe why you must have the Go-Bag with your child at all times
- Demonstrate how and when to change your child's trach ties
- Inflate and deflate a cuffed trach (if applicable)
- Demonstrate how and when to change your child's trach
- Describe how to manage problems when changing a trach



What equipment do I need to bring with my child in their 'Go-Bag'?

All the equipment needed for trach care and emergencies must be with your child at all times. Keep it in your 'Go-Bag'.

Put all the equipment you need for daily trach care and for emergencies in your 'Go-Bag'. On the next page, we list the contents of your Go-Bag and why each item is important.

Make it a habit to check your Go-Bag:

- ✓ Every day
- ✓ Every time you leave the house
- ✓ Anytime you have used something from the bag

Use the checklist on page 93 to check your Go-Bag



For your child's safety, keep your Go-Bag and a working suction unit with your child at all times.

You will have everything you need for any situation!



Contents of your Go-Bag	Why this equipment is important
Spare trach tube (same size as your child's trach tube)	<ul style="list-style-type: none"> • If your child's trach falls out, you can insert this new trach tube. Because it is the same size, it should insert easily.
Spare trach tube (1/2 size smaller than your child's trach tube)	<ul style="list-style-type: none"> • If your child's trach falls out and the same size trach does not insert easily, you can insert this smaller trach tube.
Obturator	<ul style="list-style-type: none"> • If your child's trach falls out (or partly falls out), you need to use this obturator to insert the trach. • Keep the obturator in a clean plastic bag.
Water-soluble lubricant	<ul style="list-style-type: none"> • If your child's trach falls out and needs to be reinserted, you can use this lubricant to make the trach and obturator slide in easily.
Trach ties	<ul style="list-style-type: none"> • If your child's trach ties break or get wet or dirty (with food, secretions or vomit) replace them with this extra set of trach ties.
Sterile trach gauze	<ul style="list-style-type: none"> • If your child's trach dressing gets wet or dirty, you can replace it with this extra gauze.
Cotton tipped sticks	<ul style="list-style-type: none"> • If you need to complete stoma care.
Normal saline (for trach care)	<ul style="list-style-type: none"> • If you need to complete stoma care or clean the site. • Never squeeze normal saline into your child's trach during suctioning.
Gloves	<ul style="list-style-type: none"> • To protect your child's trach, you should always wear gloves when providing any care. • Keep an extra supply of gloves in your Go-Bag.
Suction catheters	<ul style="list-style-type: none"> • Keep a supply of extra catheters, so you never run out. • Bring more suction catheters if you know you will be traveling further or for longer.
Suction Equipment and supplies	<ul style="list-style-type: none"> • Always have a working and charged suction unit with you at all times.

Emergency back-up syringe suction	<ul style="list-style-type: none"> If your suction unit is not working than you could use this to suction the trach.
Oximeter Equipment	<ul style="list-style-type: none"> You should always have a working and charged oximeter with you at all times. Also bring extra oximeter probe.
Manual resuscitation bag and mask (size for your child)	<ul style="list-style-type: none"> If there is an emergency, a health care provider may need to use the bag and mask.
Shoulder roll	<ul style="list-style-type: none"> If you need to position your child's neck to change their trach ties or complete a trach change.
Humidification Equipment or an extra HME	<ul style="list-style-type: none"> If your child will require humidification you should always carry the needed equipment An extra HME would be helpful to include.
If your child's trach is cuffed, you will also need:	
5 mL syringe (pediatric trach) or 10 mL syringe (adult trach)	<ul style="list-style-type: none"> If you need to deflate, check or inflate the cuff of your child's trach.
Sterile distilled water (for cuffed Bivona trach tube only)	<ul style="list-style-type: none"> If you need to refill a Bivona (silicone) cuffed tube with water.

** It is also important to bring a cell phone with you in case of emergency.

If applicable to your child, you may also need:

Contents of your Go-Bag	Why this equipment is important
Spare inner cannula (if your child's trach has an inner cannula)	<ul style="list-style-type: none"> If you need to replace your child's inner cannula.
Oxygen tank (with a tank key) and oxygen supplies	<ul style="list-style-type: none"> If your child needs or might need oxygen it is important for you to have an oxygen tank and the needed oxygen equipment (such as tubing)
Respiratory medications	<ul style="list-style-type: none"> If your child takes respiratory medications it is a good idea to bring these with you.

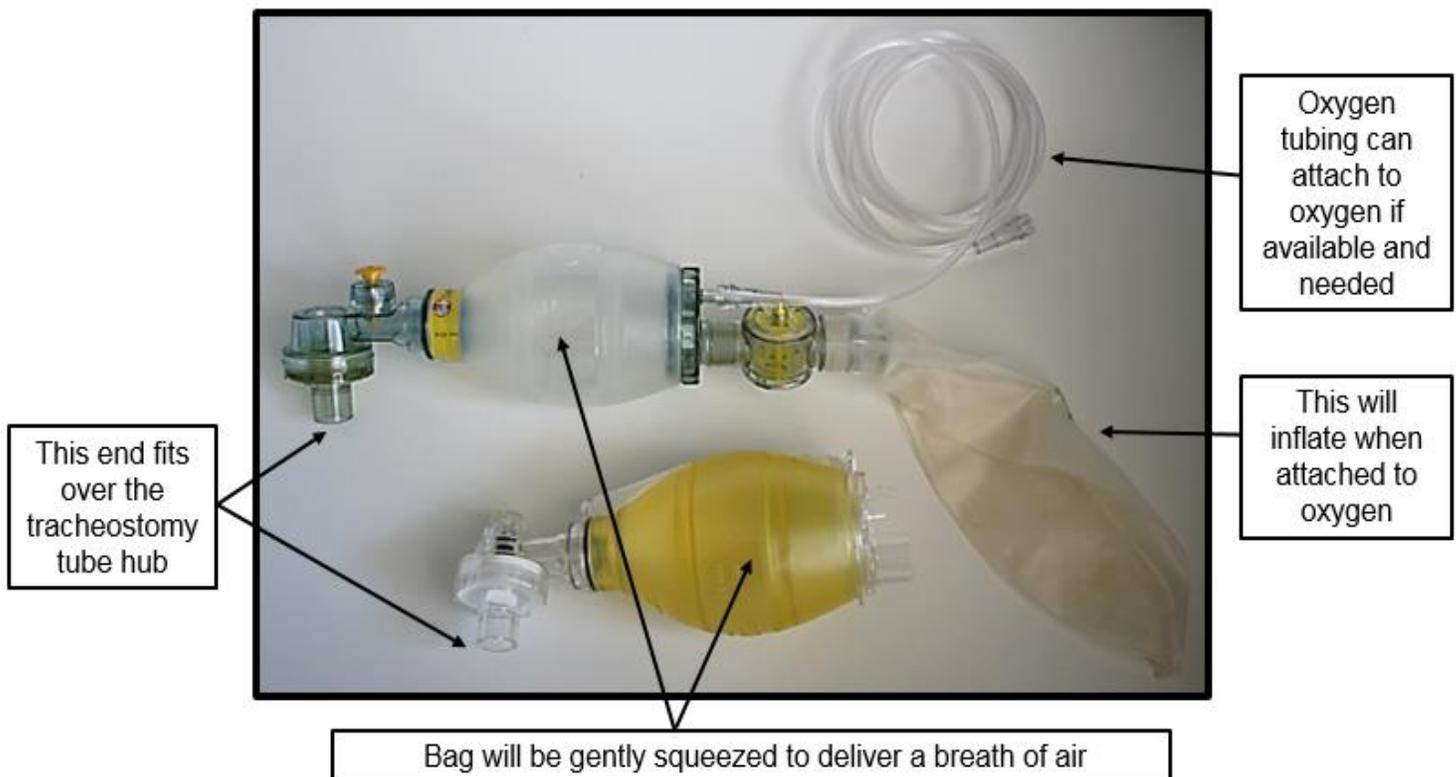
What is a Manual Resuscitation Bag?

A **manual resuscitation bag** is a device that will give breaths to a child that needs help breathing or is unable to take breaths on their own. When the bag is squeezed, air moves out of the bag and into the child's trach and into their lungs. When the child breathes out the air moves out of a valve in the bag so that you can keep the bag attached to the child's trach for as long as needed. A health care provider would use this bag to help your child breath in an emergency.

When would a Manual Resuscitation Bag be used?

- ✓ When your child is having trouble breathing and are showing signs of respiratory distress
- ✓ If your child's trach were to fall out and they were not breathing
- ✓ In any emergencies when your child is not breathing

Manual Resuscitation Bag



Your Go-Bag Checklist

<input checked="" type="checkbox"/>	Quantity	Item	Caregiver initials and date
<input type="checkbox"/>	1	Spare Trach Tube (same size as your child's trach). My child's trach size: _____	
<input type="checkbox"/>	1	Spare Trach Tube (1/2 size smaller than your child's trach tube). ½ size smaller trach size: _____	
<input type="checkbox"/>	1	Obturator	
<input type="checkbox"/>	1	Water-soluble lubricant	
<input type="checkbox"/>	1	Trach ties	
<input type="checkbox"/>	2	Sterile trach gauze	
<input type="checkbox"/>	4	Cotton tipped sticks	
<input type="checkbox"/>	2	Normal Saline	
<input type="checkbox"/>	2 pairs	Gloves (if applicable)	
<input type="checkbox"/>	5-10	Suction catheters My child's catheter size: _____ Fr	
<input type="checkbox"/>	1	Emergency Back-up syringe suction	
<input type="checkbox"/>	1	Manual resuscitation bag and mask (the right size for your child)	
<input type="checkbox"/>	1	Shoulder roll (towel or blanket)	
<input type="checkbox"/>	1	Humidification Equipment and/or an extra HME	
<input type="checkbox"/>	1	Suction Equipment with extra tubing	
<input type="checkbox"/>	1	Oximeter Equipment and extra sat probes	
If your child's trach is cuffed, you will also need:			
<input type="checkbox"/>	1	Syringe My child's syringe size: _____ mL	
<input type="checkbox"/>	1	Sterile distilled water (for silicone cuffed tubes only)	

If applicable to your child:

<input checked="" type="checkbox"/>	Quantity	Item	Caregiver initials and date
<input type="checkbox"/>	1	Spare inner cannula (if your child's trach has an inner cannula)	
<input type="checkbox"/>	1	Oxygen tank and oxygen supplies (ie. tubing)	
<input type="checkbox"/>	1	Respiratory medications (such as puffer/MDI and AeroTrach or Nebulizer equipment and compressor)	

Example Go-Bag

This parents' Go-Bag is a fishing bag



Mesh holds frequently used items for quick access



Tag has contact information

Go-Bag Checklist



Obturator in Go-bag on the top

Plastic boxes hold Go-bag items



Emergency equipment including manual resuscitation bag



This Go-Bag contains a trach tray that has everything you need for trach care or a trach change

Go-Bag tray contains child specific items such as sterile water and syringe for their cuffed trach

Example Go-Bag

This parents' Go-Bag is a travel organizer



Trach supplies are in zippered sections

Sections are labeled so items can be found quickly.

What are trach ties and why are they needed?

Trach ties:

- Hold the trach tube to your child's neck so it will not fall out.
- May be made of twill cotton or cloth with a Velcro closure.
- Are attached to both sides of the trach on the flange and wrap around the back of your child's neck.

Take care when changing trach ties, so that the trach does not accidentally become displaced or fall out.



It takes 2 people to change your child's trach ties:

- ✓ One person will hold the trach in place
- ✓ One person inspects and cleans the skin and changes the ties.

How do I know the trach ties are secure?

Inspect the trach ties to make sure they are secure by checking that the:

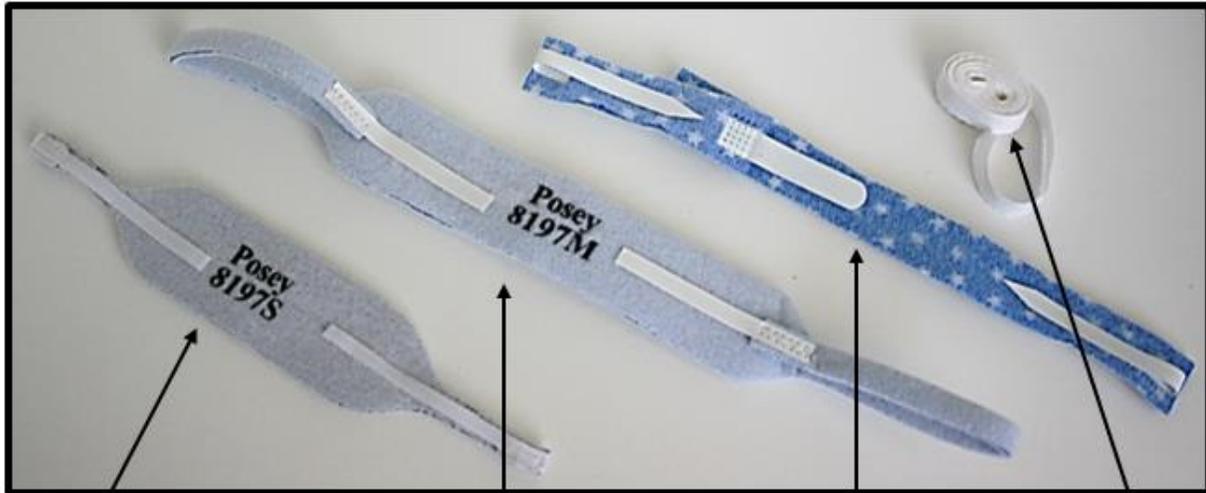
- ✓ Velcro sticks well
- ✓ Space between the ties and your child's neck is right for their size (see below for sizing).
- ✓ Trach ties are even and centered on both sides of the flange.



Trach ties are secure when:

- ✓ There is 1 finger space between your child's neck and the trach ties if they are a baby or small child.
- ✓ There is 2 finger spaces between your child's neck and the trach ties if they are an adolescent or adult.

Types of Trach Ties



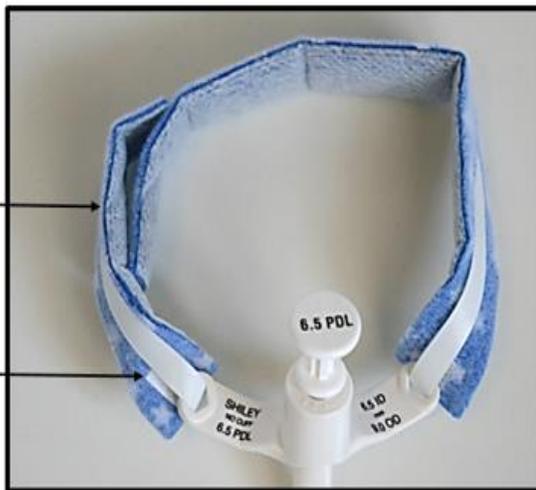
Small Posey trach ties

Medium Posey trach ties

Dale trach ties

Twill trach ties

Dale trach ties



Velcro holds ties in place on both sides

Trach tie loops around flange to secure trach tube

Posey trach ties



Velcro holds ties in place on both sides

Trach tie loops around flange to secure trach tube

When do I need to change my child's trach ties?

Check the trach ties daily and change your child's trach ties:

- Once a week or sooner as needed.
- When they are wet or dirty (with food, secretions or vomit).

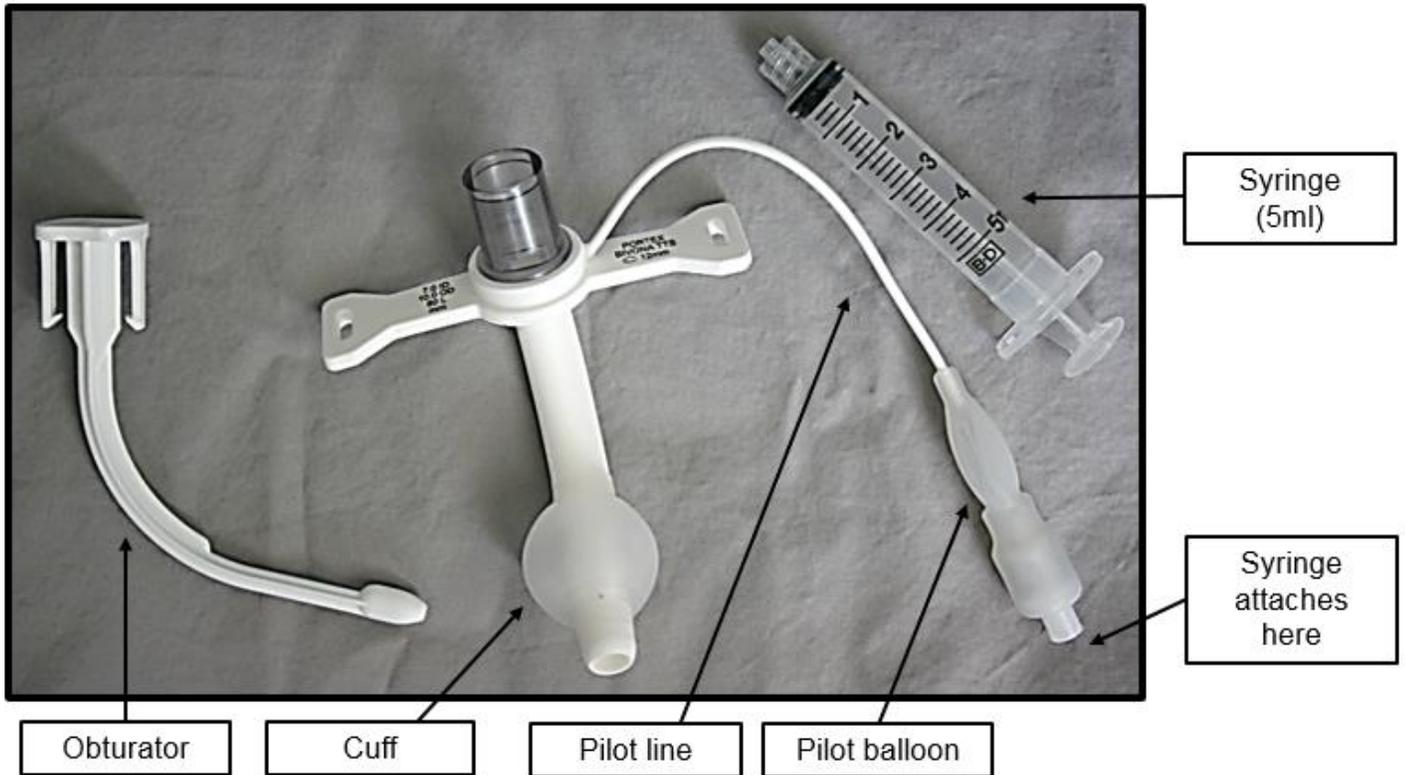
Checklist for changing trach ties

☑	Steps
☐ 1.	Have a second person ready to help you
☐ 2.	Gather supplies: <ul style="list-style-type: none"> ✓ Disposable gloves ✓ New trach ties ✓ Suction equipment ✓ Go-Bag
☐ 3.	Make sure your child is in a comfortable position by placing a roll underneath their shoulders.
☐ 4.	Wash your hands well and put on clean gloves.
☐ 5.	Have your helper gently hold on to the edges of the flange.
☐ 6.	Remove the old trach ties.
☐ 7.	Check that the skin under the trach ties is clean and dry. Make sure to note: <ul style="list-style-type: none"> ✓ Any redness or signs of skin breakdown.
☐ 8.	Thread one end of the clean trach tie through the hole on one side of the flange. Pull the trach tie through the hole and attach the Velcro.
☐ 9.	Wrap the long end of the tie around your child's neck and then through the other side of the flange. Make sure the Velcro is secure. Adjust the tie so that there is the correct finger space between your child's neck and the trach ties (1 finger space for a child and 2 spaces for an adolescent) and they are centered on both sides of the flange.
☐ 10.	Before your helper lets go of the flange, check that the ties are not bunched up at the back of the neck by sweeping your finger under one side of the trach ties, around the neck and to the other tie.
☐ 11.	After the ties are checked and secured, your helper can let go of the trach.
☐ 12.	Put the old or dirty ties into the garbage. If you plan on keeping the trach ties, wash them so they can be reused. Make sure to check that the Velcro sticks well before re-using.
☐ 13.	Remove gloves and wash your hands well.

Additional care for a cuffed trach

If your child's trach tube has a cuff, there are a few extra things you need to know and do. The cuff would be inflated to control ventilation or in rare situations to manage secretions.

Parts of a Cuffed Trach



Learning the parts of a cuffed trach

Cuff

- The cuff is a balloon near the end of the trach tube.
- When inflated, the cuff forms a seal against the walls of the trachea. This seal stops air from flowing up through the vocal cords into the mouth and nose. When inflated, we say that “the cuff is up”.
- When deflated, the balloon is empty and air can pass the vocal cords and up to the mouth and nose. When deflated, we say that “the cuff is down”.

Pilot line	<ul style="list-style-type: none"> • This is a very thin tube, going from the cuff to the outside of your child’s trach. • You can attach a syringe to the end of this line to fill the cuff with either air or water (depending on the type of trach).
Pilot balloon	<ul style="list-style-type: none"> • This is a small balloon you can see at the end of the pilot line that shows you whether the cuff is inflated or deflated. • Because the cuff lies in the trachea, you cannot see from the outside whether it is inflated or deflated. When you inflate the cuff, the pilot balloon also fills up. When you deflate the cuff, the pilot balloon also deflates and becomes flat.
Syringe	<p>You will use a sterile syringe to:</p> <ul style="list-style-type: none"> • Draw up the needed amount of air or sterile water and fill the cuff. • Deflate or remove the air or water from the cuff.

Cuffed Trach with Cuff “up”/ inflated



Cuff balloon “up” or inflated

Pilot balloon inflated when the cuff is “up” or inflated

Cuffed Trach with Cuff “down”/ deflated



Cuff balloon “down” or deflated

Pilot balloon deflated when the cuff is “down” or deflated

Checklist for inflating and deflating a cuff

☑	Steps
To inflate the cuff (putting the cuff 'up').	
☐ 1.	Gather supplies: <ul style="list-style-type: none"> ✓ Disposable gloves ✓ Clean, empty 5 mL (pediatric trach) or 10 mL (adult trach) syringe ✓ Sterile water (if applicable) ✓ Suction equipment ✓ Go-bag
☐ 2.	Make sure your child is in a comfortable position.
☐ 3.	Wash your hands and put on clean gloves.
☐ 4.	Make sure the trach tube is not blocked, so the air can move freely through it. You may need to suction your child.
☐ 5.	Before inflating the cuff, the cuff must be fully 'down'. To make sure there is no air or sterile water in the cuff: <ul style="list-style-type: none"> • Attach a syringe to the pilot line. • Draw back on the syringe to suck out any air or sterile water from the cuff. Take note of the volume removed from the cuff. <p>Important:</p> <ul style="list-style-type: none"> • If the pilot balloon already has air or sterile water in it, do not add more air or sterile water. • Never add air or sterile water to a cuff that already has air or sterile water in it.
☐ 6.	Remove the syringe from the pilot line. Fill the syringe with the prescribed amount of air or sterile water. My child's cuff needs to be filled with _____ mL of _____.
☐ 7.	Attach the syringe to the pilot line. Slowly push the plunger in, to fill the balloon with the prescribed amount of air or sterile water.

<input type="checkbox"/> 8.	<p>Remove the syringe from the pilot line. There is a valve in the pilot line that stops the air or sterile water from leaking out.</p> <p>Important:</p> <ul style="list-style-type: none"> • Do not over-inflate the cuff. Only fill the balloon to the prescribed volume. • If the cuff is filled with too much air or sterile water, it will damage your child's trachea or damage the cuff.
<input type="checkbox"/> 9.	<p>If there is resistance and the cuff will not inflate, repeat the steps above.</p> <p>If you are still having trouble inflating the cuff, you will need to replace the trach.</p>
<p>To deflate the cuff (putting the cuff 'down').</p>	
<input type="checkbox"/> 1.	<p>Gather supplies:</p> <ul style="list-style-type: none"> ✓ Disposable gloves ✓ Clean, empty 5 mL (pediatric trach) or 10 mL (adult trach) syringe ✓ Sterile water (if applicable)
<input type="checkbox"/> 2.	<p>Make sure your child is in a comfortable position.</p>
<input type="checkbox"/> 3.	<p>Wash your hands and put on clean gloves.</p>
<input type="checkbox"/> 4.	<p>Suction your child's mouth, if needed.</p> <p>Sometimes, mucus sits in the throat or on top of an inflated cuff. When the cuff is deflated, this mucus can fall from around the cuff into the lungs, making your child cough.</p> <p>It is a good idea to have a suction catheter ready in case this happens.</p>
<input type="checkbox"/> 5.	<p>Holding the clean syringe, push the plunger all the way down to remove any air from the syringe.</p>
<input type="checkbox"/> 6.	<p>Attach the syringe to the pilot line.</p> <p>Slowly pull back on the plunger of the syringe until the pilot balloon on the pilot line is flat and the syringe cannot be pulled back any more.</p>
<input type="checkbox"/> 7.	<p>Check that you have the prescribed amount of air or sterile water in your syringe.</p> <p>If you have the prescribed amount in your syringe, then the cuff has been deflated properly.</p>

How do I change my child's trach tube?

Completing a **Trach tube change** means removing the old tube and inserting a new one.

Change your child's trach tube regularly (as prescribed) to make sure:

- The plastic of the tube is intact and not damaged or broken.
- The tube is working properly (if not changed regularly, mucus can build up and block the tube).

How often you need to change your child's trach tube depends on the type of the trach and the manufacturer's guidelines. You will also need to change your child's trach in an emergency.



Always have another trach tube available, in addition to the tube you are inserting. It is important to have a 'back-up' trach.

Make sure your child has not eaten for at least an hour before a trach change. If your child has a continuous feed, you may want to pause the feed for 1 hour before.



Place a roll under your child's shoulders to support their neck position



Check that there is the correct space under the trach ties:

- ✓ 1 finger space for babies and small children
- ✓ 2 finger spaces for adolescents and adults

Checklist for changing the trach tube

☑	Steps
☐ 1.	Have a second person ready to help you
☐ 2.	<p>Gather supplies:</p> <ul style="list-style-type: none"> ✓ New trach tube (same size as your child's current trach tube) ✓ Spare trach tube (1/2 size smaller than your child's trach tube) ✓ Trach ties ✓ Water-soluble lubricant ✓ Stoma care supplies <ul style="list-style-type: none"> • Sterile trach gauze • Normal saline (or Sterile distilled water) ✓ Suction equipment ✓ Go-Bag <p>For a cuffed trach, you will also need:</p> <ul style="list-style-type: none"> • Clean, empty 5 mL(pediatric trach) or 10 mL(adult trach) syringe • Sterile water (for Bivona (silicone) cuffs only)
☐ 3.	<p>Wash your hands well and put on clean gloves.</p> <p>Keep the tube as clean as possible, by wearing gloves and touching it only at the flange.</p>
☐ 4.	<p>Open the package of the new trach (same size as your child's trach). Look at the trach and check if there are any cracks or breaks in the new tube.</p> <p>If there is a cuff on the trach, check that it is working:</p> <ul style="list-style-type: none"> ✓ Inflate the cuff (with water or air, depending on the type of trach tube) using the 5 mL or 10 mL syringe. Remove the syringe and make sure the cuff remains inflated and that there are no leaks. ✓ Then deflate the cuff fully, using the same syringe. ✓ If there is a leak, do not use this tube. Please keep the box and the tube and tell your Respiratory Home Care Company about the broken tube.
☐ 5.	Put the obturator into the trach tube. Insert and remove it a few times to make sure it can be removed quickly when it goes into place.

<input type="checkbox"/> 6.	Using the obturator, lubricate the end of the trach tube with a very small amount of water-soluble lubricant. Set the trach aside in the sterile packaging.
<input type="checkbox"/> 7.	Make sure your child is in a comfortable position, lying on their back with a rolled towel under their shoulders.
<input type="checkbox"/> 8.	Do stoma care and suction your child.
<input type="checkbox"/> 9.	Remove humidification or oxygen from the end of the trach tube, if applicable.
<input type="checkbox"/> 10.	Have your helper hold the trach tube gently, but securely at the flange. Remove the old trach ties. Take care that the trach tube does not fall out accidentally.
<input type="checkbox"/> 11.	If your child's trach has a cuffed tube, deflate the cuff completely.
<input type="checkbox"/> 12.	Take out the old trach tube, using a downward motion that follows the curve of the trach tube. Do not pull the tube straight out.
<input type="checkbox"/> 13.	Take the prepared new trach tube with the obturator and guide the trach into the stoma using a curved motion that follows the curve of the trach tube.
<input type="checkbox"/> 14.	As soon as the new trach tube is in place, make sure your helper continues to hold the trach still while you immediately remove the obturator from the trach tube.
<input type="checkbox"/> 15.	If your child has a cuffed trach, inflate the cuff with the prescribed amount of air or sterile water (depending on the size and type of trach).
<input type="checkbox"/> 16.	Place your child back on oxygen or humidification, if applicable.
<input type="checkbox"/> 17.	Insert and secure the trach ties into the flange, using the steps for changing trach ties (page 99).
<input type="checkbox"/> 18.	Put on a clean trach dressing.
<input type="checkbox"/> 19.	Throw out your gloves and wash your hands.
<input type="checkbox"/> 20.	Reposition your child so that they are comfortable.
<input type="checkbox"/> 21.	Gather clean supplies, to have them ready for the next trach change.

Trach Skills Checklist

This Checklist will be a record to track when parents and caregivers complete skills in the classroom and at the bedside. All sections will need to be signed off by an RT before discharge for each trained caregiver.

Name of Caregiver: _____

Classroom Training (Manikin Practice)	Demonstrated by Bedside RT	Demonstrated by caregiver (minimum)
Stoma Care		
Cleaning		
Dressing		
Suctioning		
Measured		
Trach Tie Change		
Changing ties		
Trach Change		
Change trach		
Solo Trach Change		

Caregiver signature: _____

How do I manage problems when changing a trach?

By using the checklist for changing the trach tube (on page 105 to 106), the new tube should slide into the stoma without any difficulty. However, there are a few problems that could happen.

Below describes what you can do if you are having difficulty changing your child's trach. This might help you safely problem-solve and insert your child's trach. Your Respiratory Therapist will also review many situations like this so you will become more comfortable with a trach change.

What should I do if I cannot get the trach tube in?

1. Reposition your child by making sure the rolled towel is under their shoulders.
2. Make sure the obturator is correctly inserted with your thumb holding it in place. If your child's trach is cuffed, make sure it is completely deflated.
3. Try to reinsert the trach following the curve of airway ensuring proper technique.
4. If your child can breathe and is not in distress:
 - a) Try to reinsert the trach again.
 - b) Have your helper (the second person) reinsert the trach again.
 - c) If unable to insert, try the half (1/2) size smaller trach tube. If half (1/2) size smaller inserts and your child is stable, then go to your closest Emergency Department and call your health care provider right away.
5. If the smaller trach tube will not go in and your child is still breathing well, call 911. You cannot move your child without a stable airway. Keep your child calm and continue to monitor their breathing until help arrives.
6. If the smaller tube will not go in and your child is having trouble breathing:
 - a) Call 911, if you have a second person get them to call 911.
 - b) If your child is not breathing, cover the stoma lightly to prevent an air leak. Provide rescue breaths through your child's nose and mouth. Make sure their chest rises with each breath (following CPR guidelines).

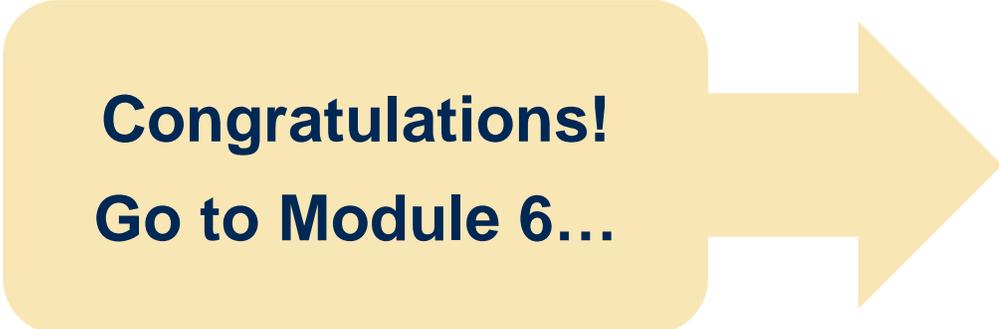
Module 5 Checkpoint

Have you reached your learning goals?

Review this list with your Respiratory Therapist:

- I can explain what a Go-Bag is and the importance of each item
- I can check my Go-Bag to make sure I have all the equipment needed for trach care and emergencies
- I can describe why the Go-Bag must be with my child at all times
- I can demonstrate how and when to change my child's trach ties
- I can inflate and deflate a cuffed trach (if applicable)
- I can demonstrate how and when to change my child's trach
- I can describe how to manage problems when changing a trach

When you are confident that you have achieved these learning goals you are ready to go to the next module.



Congratulations!
Go to Module 6...

Module
6

Understanding oxygen saturations, oxygen delivery and medications

Learning goals

When you finish this module you will be able to:

- Recognize when your child is having difficulty breathing
- Explain what is oximetry and how to monitor your child's oxygen saturation levels at home
- Use oxygen in your home safely
- Demonstrate how to use your home oxygen equipment
- Demonstrate how to give your child medication using a puffer (metered dose inhaler)
- Demonstrate how to use a nebulizer to give your child a medication



How do I know when my child is having difficulty breathing?

When breathing becomes difficult, your child's body must work harder to breathe. We will teach you the signs to watch for, what they mean and how you can help.

There are things you can see, hear and measure when breathing takes more effort.

When your child has difficulty breathing, it takes more work (effort) to breathe.



Signs of difficulty breathing

What you can SEE

Faster breathing	Your child is breathing faster than usual. They may look like they can't catch their breath.
Retractions	You can see the skin being pulled in, between or under their ribs.
Abdominal breathing	You may notice you child's stomach moving up and down more noticeably than normal with breathing.
Nasal flaring	Your child's nostrils flare out (open wider) when breathing in.

Increased coughing	Your child is coughing more often to try and clear their airway.
Skin colour	Your child's skin may become very pale or grey (dusky). This means your child is not getting enough oxygen. With severe difficulty breathing, your child's skin may turn bluish-grey. You must take action immediately to help them clear their airway and breathe better.
Facial expression	Your child may look scared or frightened.
Head bobbing	Your child's head might bob up and down with each breath.
Tracheal tugging	The area around your child's trach may look like it is pulling in with each breath.

What you can HEAR

Wheezing	You may hear wheezing when your child breathes in or out. This is the sound of air passing through narrowed airways. It may sound squeaky or like whistling.
Secretions (wet breathing)	You may hear wet, coarse or rattling sounds from their trach tube and more suctioning may be needed.
Less air movement	You may notice that their breathing is quieter than normal
More air movement	You might hear your child breathing deeper.

What you can MEASURE

The amount of oxygen in your child's blood may change. You can measure this with a machine called a **pulse oximeter**. The oximeter shows the **oxygen saturation level**. This is the percent of oxygen that is getting from the air in your child's lungs into their blood.

Based on your child's condition and need for oxygen, your health care team will set a range for your child's oxygen saturation level before discharge.

How will my child's oxygen saturation level be monitored?

The oxygen in your child's blood is measured with a machine called a Pulse Oximeter. It uses a red light attached to a sticker called an **oximetry probe** or "**sat probe**". The sticker is like a band-aid and can be placed on a finger or toe. It should not hurt or feel warm. The probe is moved to a different site at least every 4 hours, so that the skin under the light does not get irritated. You also want to make sure the sticker is not too tight. The sticker will allow you to measure two numbers: your child's oxygen saturation level and their heart rate.

My child's normal oxygen saturation levels are:

My child's normal heart rate levels are:



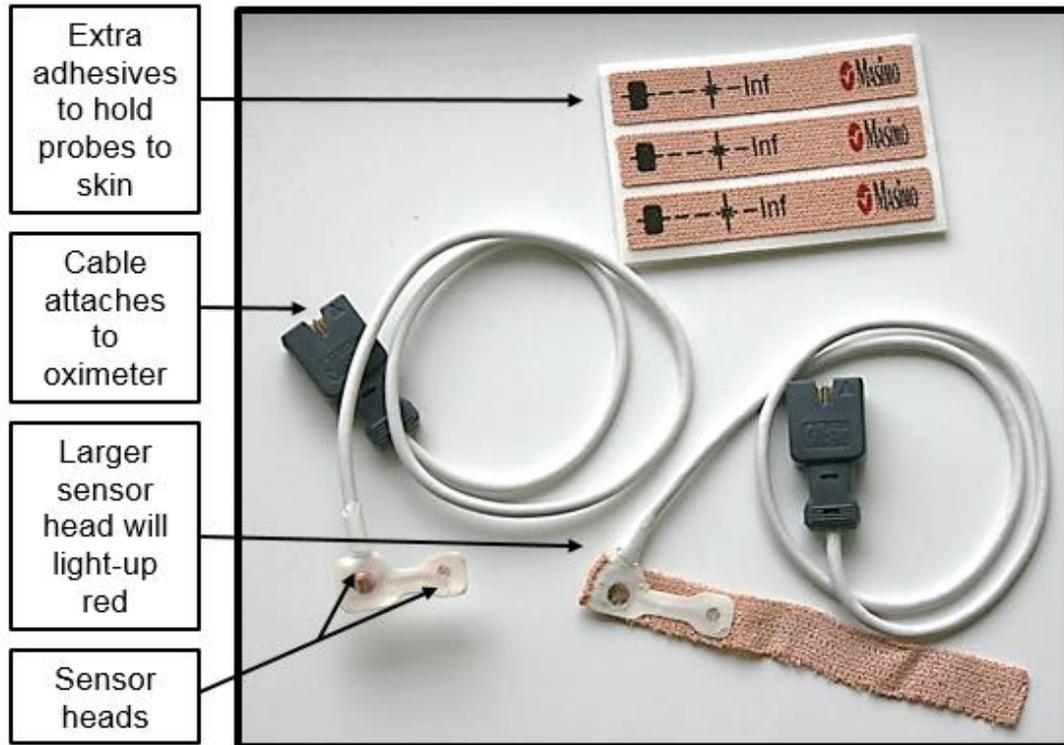
Always keep the oximeter probe on your child when they are sleeping, unattended or unwell.

How do I place the oximetry probe?

The "sat probe" measures the percent of oxygen molecules attached to hemoglobin. Hemoglobin is found in your red blood cells and one of its roles is to deliver oxygen to the body. The heart pumps the blood to the rest of the body and the hemoglobin carries the oxygen with it.

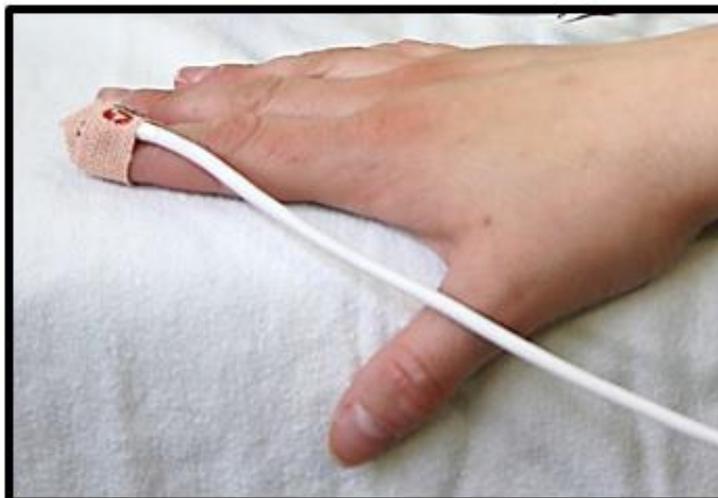
When you place the probe on your child, the red light measures the oxygen on the hemoglobin and gives you a percentage. This is why you should place the sensor head with the red light in a good position on a finger or toe and then place the other sensor head on the opposite side of the finger or toe. This will allow the red light to read the oxygen saturation properly. The best place for the oximetry probe will depend on the age and size of your child.

Parts of an oxygen saturation probe



Fingers or hand

- A finger nail is the best spot for the probe. Do not place the probe over nail polish or a fake nail. If they cannot be removed, use a different spot!
- If the finger nail is not large enough, you can place the probe on the outside edge of the finger.



Toes or foot

- Toes are a good choice if your child is not walking.
- The toenail of the big toe is the best spot for the probe.
- If the toenail is not large enough, put the probe on the other side of the toe.
- If the toe is not large enough, place the probe on the outside edge of the foot.



You must place the probe properly to get the correct oxygen saturation level.

Change the position of the probe at least every 4 hours.



You can use foam tape to hold the sat probe in place on the hand or foot

How will I monitor my child's oxygen saturation level at home?

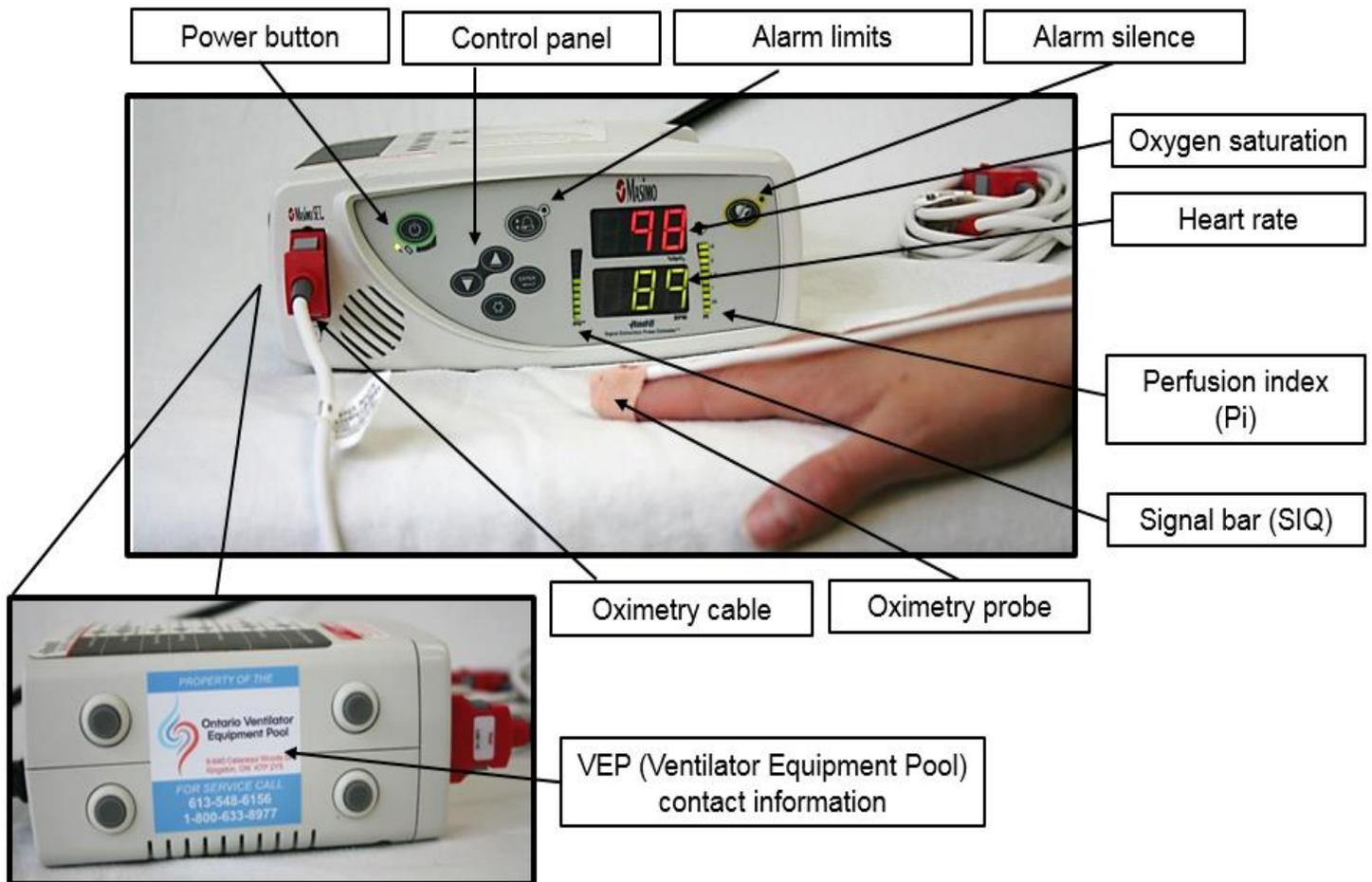
You will need to monitor your child's oxygen saturation levels at home, when your child is sleeping or is unattended. This is called Home Oximetry. Your doctor will prescribe alarm limits for your child's oximeter.

Keep your home oximetry equipment plugged in at all times. It has a battery when you need it to be portable.

There are two types of home oximeter equipment:

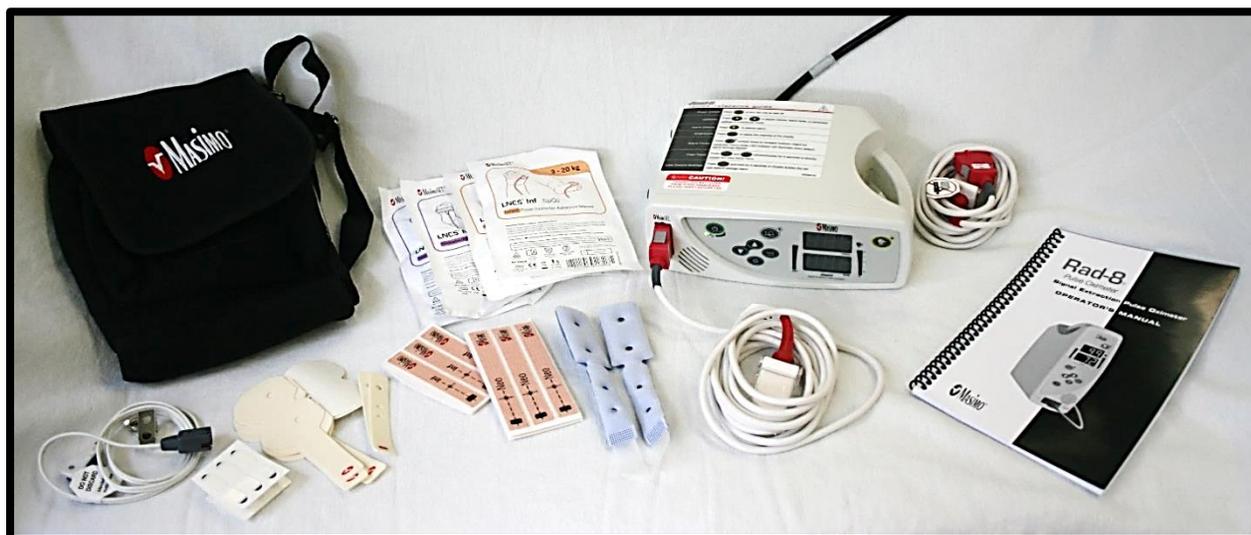
- Masimo Home Oximeter
- TruSat Home Oximeter

Masimo Home Oximeter



Power button	Use this button to turn the machine on and off.
Oxygen saturation Screen	The top screen displays your child's oxygen saturation in red.
Heart rate Screen	The bottom screen displays your child's heart rate in green.
Signal bar (SIQ)	These vertical green bars show the signal quality from the probe. The level rises and falls with the heart rate. When the signal quality is poor, the bars turn red.
Perfusion index (Pi)	These vertical green bars show the strength of the pulse. If it is red, the probe may need to be repositioned to get a better reading.
Alarm limits button	This is used to adjust or set alarm limits.
Alarm silence	Use this button to silence the alarm for a short period of time so that you can troubleshoot the alarm.
Control panel	Use these buttons to change the settings on your monitor if changes are prescribed. Your Respiratory Therapist will teach you how to do this.
Cable and oximetry probe	This is where the cable attached to the oximetry probe goes into the machine.

Your Masimo comes with this equipment...



Checklist for saving new alarm settings

☑	Steps
<p>You may need to save new alarm settings when your health provider changes the order for your child’s alarm settings. Each time you turn on your oximeter, these settings will be saved and will re-appear.</p>	
<input type="checkbox"/> 1. 	<p>Turn power on. (You should see the previous alarm settings on the screen)</p>
<input type="checkbox"/> 2.  	<p>Change alarm settings by pressing the Alarm Limits Button (the bell symbol) and use the Alarm Limits Button to scroll through each alarm. Bell symbol:</p> <ul style="list-style-type: none"> • 1st press is low SpO2 • 2nd press is high SpO2 • 3rd press is low Heart rate (bpm) • 4th press is high Heart rate (bpm) <p>Use up and down arrows to change the alarm settings as ordered.</p>
<input type="checkbox"/> 3.   	<p>Set the alarm settings to default so that these alarm limits will be saved by:</p> <ol style="list-style-type: none"> a) Holding the Alarm Limits Button (the bell symbol) and ‘ENTER’ key at the same time for 3 seconds until you see ‘def’ in the top screen in red (for default). b) Pressing the down key twice to get to ‘uSr’ screen (for user) c) Pressing ‘ENTER’ so alarm settings are maintained
<input type="checkbox"/> 4. 	<p>Turn monitor off and then back on again to check that the alarm settings are saved.</p>



Change and save new alarm limits ONLY when the order for the alarm limits has been changed by your health care provider and they instruct you to do so.

Each time you turn on the monitor you should check that the alarm limits are set properly.

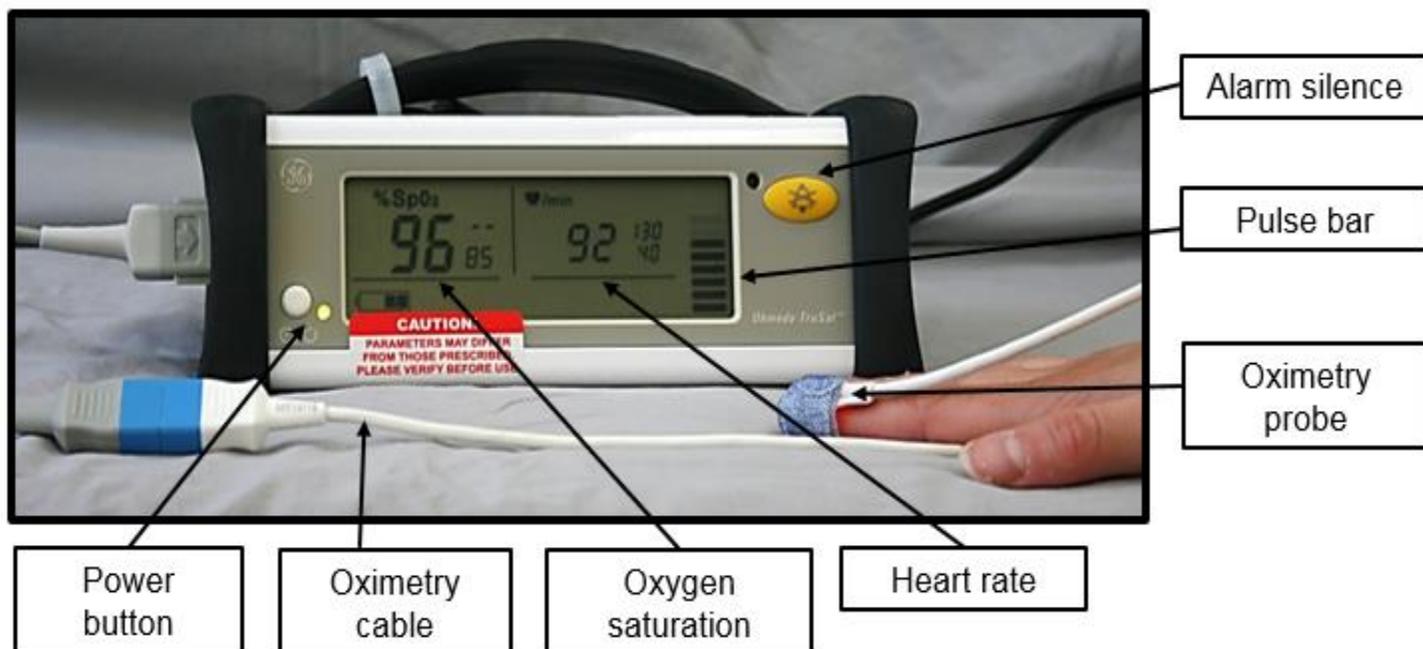
Oximetry study and oximeter memory

Your Masimo oximeter records and stores your child's oxygen saturations. Your health care provider can download this information from your oximeter. This is called an **oximetry study** and it will allow your health care provider to track your child's oxygen saturations for a period of time.

Checklist for setting up an oximetry study

☑	Steps
<p>You may need to set up your oximeter for an oximetry study when your health care provider wants to view your child's saturations over a certain period such as overnight. Before the study, you may need to clear the Masimo memory and change the averaging time (amount of time in seconds the data is saved to memory) as per your health care provider.</p>	
<input type="checkbox"/> 1. 	Turn power on.
<input type="checkbox"/> 2.    	Clear the previous data by pressing: <ol style="list-style-type: none"> a) 'ENTER' key 4 times until you see 'Clr' in top screen and 'no' in bottom screen b) The up arrow to change 'no' to 'yes' c) 'ENTER' and the screen will move 'yes' to the top screen and 'Clr' will now appear in the bottom d) 'ENTER' again to confirm
<input type="checkbox"/> 3.   	Change the averaging time by pressing: <ol style="list-style-type: none"> a) 'ENTER' key and down arrow at the same for 3 seconds until you see 'sec' in top screen and a number in bottom screen b) The down arrow to change number setting to desired number (set 2 seconds-for overnight oximetry studies and set to 8 seconds for home monitoring) c) 'ENTER' and rAP will appear in the top screen
<input type="checkbox"/> 4. 	Turn monitor off and then back on again to check that the averaging time settings are saved. The screen will flash through all the alarm settings and the averaging time setting is the last setting to flash 'sec' and '2 or 8' should appear depending on what you changed it to.

TruSat Home Oximeter



Power button	Use this button to turn the machine on and off.
Oxygen Saturation (% SpO2)	The large number on the left is your child's oxygen saturation level. The two smaller numbers are the current alarm settings for the oxygen saturation level. If the oxygen saturations go above or below these numbers, the alarm will ring.
Heart Rate Screen	The large number on the right is your child's heart rate. The two smaller numbers are the current alarm settings for the heart rate. If the heart rate goes above or below these numbers, the alarm will ring.
Alarm Silence	Use this button to silence the alarm for a short period of time.
Pulse Bar	This vertical bar will rise and fall with the heart rate as your child breathes. It will help you know if the probe is working properly.
Cable and Oximetry Probe	This is where the cable attached to the oximetry probe goes into the machine.

Equipment Checkpoint

Make sure you always have these supplies with your Home Oximetry equipment:

- ✓ Extra oximetry probes
- ✓ Foam tape for holding the oximeter probe on the skin
- ✓ Spare cable
- ✓ AC Cable

For more information about your child's Home Oximetry equipment, read the instruction manual that came with the equipment or contact the Respiratory Therapist.



What should I know about home oxygen therapy?

Oxygen is a gas and is the 'fuel' our bodies need to live and grow. Oxygen is found in the air around us. We call this '**room air**' and it contains 21% oxygen.

When your child's oxygen saturation level is low, they may need more oxygen (than what is in room air) to help them breathe. For example, we can give your child 30% or 40% oxygen to bring their oxygen saturations back to a normal level.

Your health care team will give you a prescription (if needed) for oxygen that tells you the amount of oxygen your child needs.



Oxygen is a medication that is prescribed. You must use oxygen safely and give your child the correct dose, just as you would other medications.

Too much or too little oxygen can harm your child.

How do I use oxygen safely?

Oxygen is safe to use in your home. However, there are a few precautions to take so that your child is safe when using oxygen.

No smoking

- No one can smoke around your child. Oxygen can catch on fire easily, which could lead to severe burns.
- This includes e-cigarettes, and other types of pipes or electronic smoking devices.
- It's a good idea to post no-smoking signs at the entrance of your home.

Keep away from flammables

- Keep oxygen away from all flammables and sources of fire such as candles, matches, lighters, furnaces, stoves and fire places.

Get training for home oxygen use

- Never allow anyone who has not been trained to use your child's oxygen equipment.
- Never allow young children to touch or change the controls of your child's equipment.

How is oxygen delivered to my child?

A home oxygen system will be delivered to your home.

There are two oxygen delivery systems:

- An oxygen concentrator
- An oxygen cylinder

Oxygen concentrator

- An oxygen concentrator is a machine that makes oxygen.
- If your child also needs humidification, the oxygen concentrator can be connected to the humidification equipment to deliver the oxygen through the same tubing.



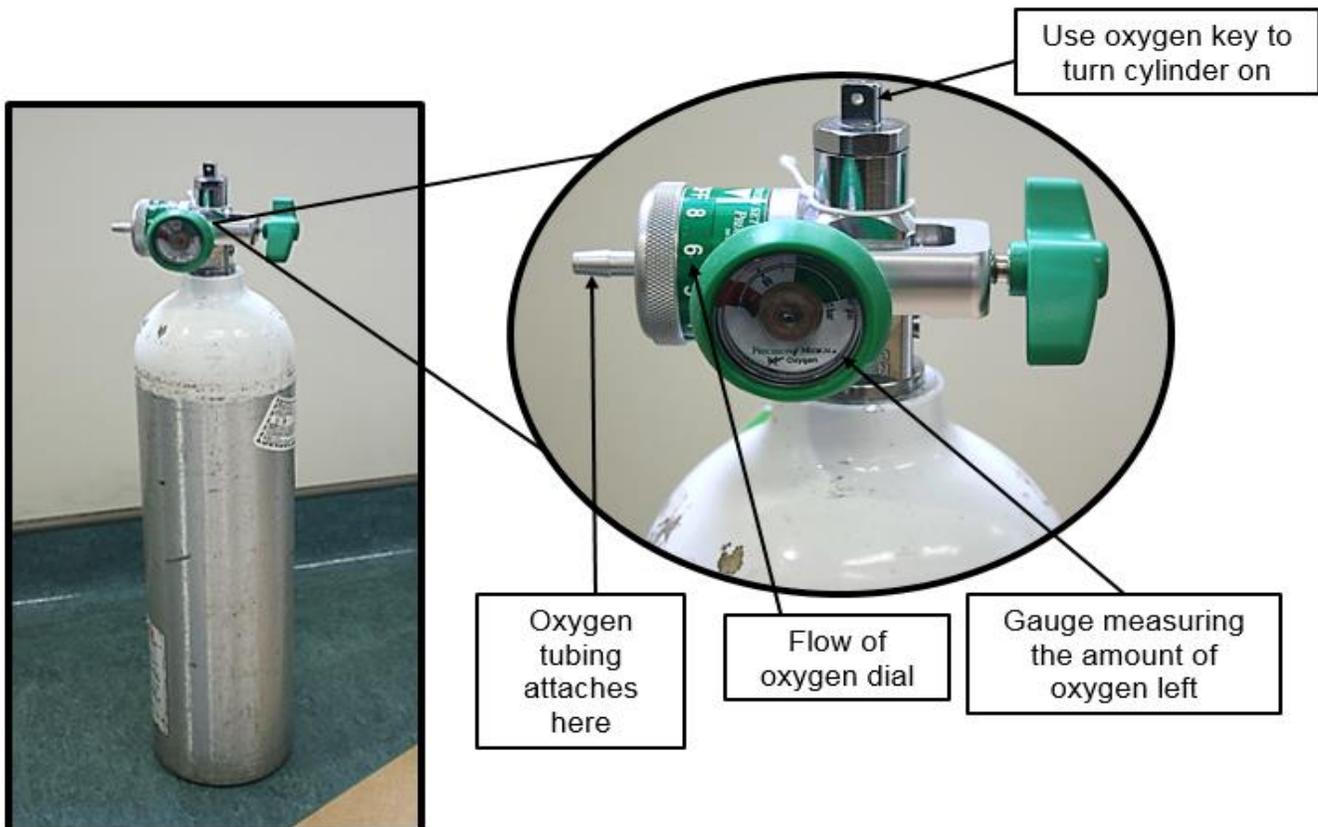


For safety in your home:

- Put your oxygen concentrator close to an electrical outlet. Do not use an extension cord.
- Do not put the oxygen concentrator near curtains or anything that could block the intake of air.
- Keep the oxygen concentrator away from heating registers, heaters, fireplaces or anything flammable.

Oxygen cylinder

- An oxygen cylinder is a container of oxygen. It may come with a small wheeled cart or a carry bag.
- The oxygen cylinder can deliver oxygen at different levels without using electricity. Because it doesn't need electricity, it can be used when there is no power or when your child is traveling but it contains a limited amount of oxygen.
- Oxygen cylinders come in different sizes. The size of your cylinder will depend on your child's prescription for oxygen. It is important to know the size and the flow required so you know how long the tank will last.





For safety in a vehicle:

- When your child travels in a car or other vehicle, you must take the oxygen cylinder with you.
- Lie the cylinder flat on the floor. Cushion it with a blanket or pillows, so it will not move around while you are driving.
- Do not allow anyone to smoke in the vehicle.

Equipment Checkpoint

Make sure you always have these supplies with your Home Oxygen equipment:

- ✓ Extra oxygen tubing
- ✓ Oxygen tank key
- ✓ Extra oxygen tank (if applicable)

Your Respiratory Home Care Company will teach you how to safely use your Home Oxygen Equipment.



Can medications improve my child's breathing?

Yes, there will be times when your child needs medications to help them breathe better. These medications may be given through a puffer or as a nebulized medication. Both methods turn liquid medication into a mist (aerosol) that can be inhaled into the lungs.

Giving your child a puffer

Your child may need medications given with a puffer, which is also called a **metered-dose inhaler** (MDI). A MDI turns liquid medication into tiny particles (aerosol) that can be inhaled through the trach into the lower airways and lungs.

You will need to use an **AeroTrach** to give an MDI medication to your child. This device holds the medication from the MDI while your child breathes it into their lungs. The AeroTrach delivers more medication to the lungs than using the MDI alone. If your child is using an HME or speaking valve, you must remove these before giving the medication.

AeroTrach for Puffers/MDIs



Checklist for using an AeroTrach with a Puffer or Metered Dose Inhaler (MDI)

☑	Steps
☐ 1.	Gather supplies: ✓ AeroTrach ✓ Puffer (MDI)
☐ 2.	Suction your child's trach.
☐ 3.	Check that you are using the correct puffer and the expiry date has not passed.
☐ 4.	Take the plastic cap off the MDI mouthpiece.
☐ 5.	Shake the MDI well. Be sure to note that there is medication inside.
☐ 6.	If you need to prime your MDI (based on the MDI priming chart on page 131): Face the MDI towards a garbage can or sink. Shake and press down on the canister to spray the medication into the air (repeat as directed).
☐ 7.	Put the mouthpiece of the MDI into the back opening of the AeroTrach.
☐ 8.	Gently place the round end of the AeroTrach over the end of your child's trach.
☐ 9.	Press down on the canister to spray the medication into the AeroTrach.
☐ 10.	Hold the AeroTrach in place for at least 5 to 6 breaths. For infants, you may need to allow for up to 8 breaths as instructed by your RT.
☐ 11.	If your child has any trouble breathing while the AeroTrach is over the trach, remove the AeroTrach and make sure that breathing improves.
☐ 12.	For each puff of medication, follow the same steps. Don't forget to shake the MDI well between each puff.
☐ 13.	Wait at least 30 seconds between puffs. If your child is receiving oxygen, you may need to give them oxygen between puffs.

Puffer or MDI Priming Guidelines

Name of Medication	Number of sprays*	Time when puffer should be primed:
Airomir	4 sprays	14 days
Alvesco	3 sprays	7 days
Atrovent	1 spray (2 sprays if new)	3 days
Flovent	1 spray	7 days
QVAR	4 sprays	14 days
Ventolin	4 sprays	28 days

*Always prime your puffer when it is new following the same number of sprays.

Always refer to the medication instructions or pharmacy instructions before using your puffer.



Giving your child a nebulized medication

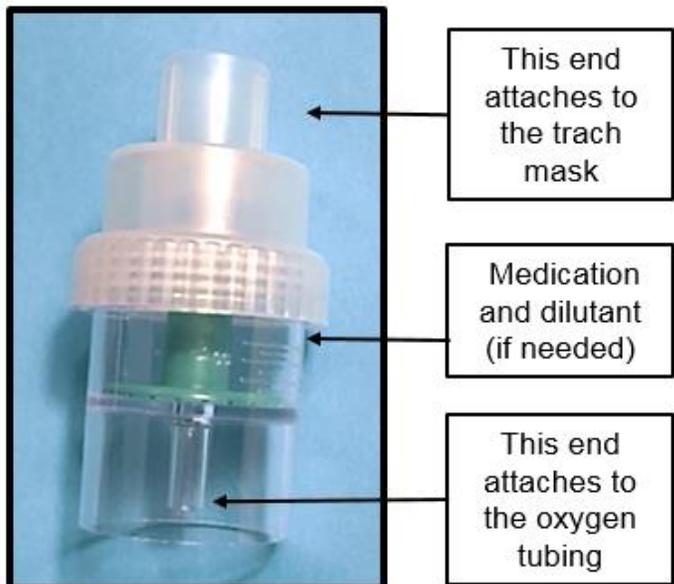
Your child may need **nebulized medications** which are given with a compressor. The compressor turns the liquid medication into a mist, so it can be inhaled. If your child is using an HME or speaking valve, these must be removed before giving the medication.

Nebulizer compressor



- Power cord
- Compressor
- Power button
- Oxygen tubing
- Trach mask
- Nebulizer set

Nebulizer Set



This end attaches to the trach mask

Medication and dilutant (if needed)

This end attaches to the oxygen tubing

Checklist for giving nebulized medications

☑	Steps
☐ 1.	Gather supplies: <ul style="list-style-type: none"> ✓ Liquid medication for inhalation (such as Ventolin). ✓ Normal saline or another liquid to dilute the medication (if needed) ✓ Syringes to draw up medication and liquid for diluting ✓ Nebulizer equipment ✓ Compressor ✓ Trach mask
☐ 2.	Read the label carefully. Some medications come pre-mixed as one dose. Others have to be prepared (drawn up into a syringe). <p>Make sure:</p> <ul style="list-style-type: none"> • You are giving the right medication • The medication is in a form that can be inhaled • The expiry date has not passed
☐ 3.	Check that you have the right dose. For pre-mixed doses, check that the dose is the same as ordered.
☐ 4.	If you have to prepare the dose, use a clean syringe to draw up the correct dose of medication from the bottle. The bottle of medication may need to be stored in the fridge
☐ 5.	If you have to dilute the medication with normal saline or sterile water, follow the instructions on the label carefully. Use another clean syringe to draw up ordered amount of diluting liquid.
☐ 6.	If you are preparing a dose, push the medication and diluting liquid from the syringes into the nebulizer cup. If you are using pre-mixed dose, turn the top of the prepared plastic vial to open the dose. Squeeze the sides of the vial to empty.
☐ 7.	Attach the nebulizer cap to the nebulizer equipment: <ol style="list-style-type: none"> 1. Make sure you do not spill the medication and attach the bottom of the cup to the tubing. 2. Attach the bottom of the cup to the air compressor tubing.

<input type="checkbox"/> 8.	Help your child get into a comfortable position. If possible, they should sit upright with their head positioned to take good, deep breaths.
<input type="checkbox"/> 9.	Suction your child.
<input type="checkbox"/> 10.	Attach the tubing of the nebulizer equipment to your child's trach mask.
<input type="checkbox"/> 11.	Turn on the compressor.
<input type="checkbox"/> 12.	<p>Make sure the nebulizer is creating a steady mist.</p> <p>If you do not see a mist:</p> <ul style="list-style-type: none"> • Check the tubing to make sure it is connected properly and that there are no kinks or breaks. • Check the compressor to make sure it is working.
<input type="checkbox"/> 13.	Ask your child to breathe in and out normally as the medication mists.
<input type="checkbox"/> 14.	<p>Your child should not have any immediate side effects from the medication.</p> <p>Important</p> <p>If your child has any of these symptoms, stop the medication:</p> <ul style="list-style-type: none"> • Palpitations (your child may say their heart is racing), Chest pain, Dizziness, Nausea, Uncontrollable coughing, Difficulty breathing <p>If you stop the medication because of these symptoms, let your child rest and breathe normally for 5 to 10 minutes.</p> <ul style="list-style-type: none"> • If symptoms improve, you may want to continue the treatment. • If your child still has symptoms, stop the treatment and make sure that breathing improves. You may need to suction the trach to make sure it is clear.
<input type="checkbox"/> 15.	<p>If your child is tolerating the nebulized medication, continue the treatment until all the medication is gone from the nebulizer cup.</p> <p>Tap the side of the cup occasionally to make any droplets go to the bottom of the cup where they can be nebulized.</p>
<input type="checkbox"/> 16.	<p>The equipment may make a different sound when all of the medication has been inhaled.</p> <p>When there are no droplets the cup and the mist is gone, the treatment is complete. Turn off the compressor.</p>
<input type="checkbox"/> 17.	Rinse and clean out the nebulizer equipment as directed.
<input type="checkbox"/> 18.	Resume your child's humidification and/or oxygen.

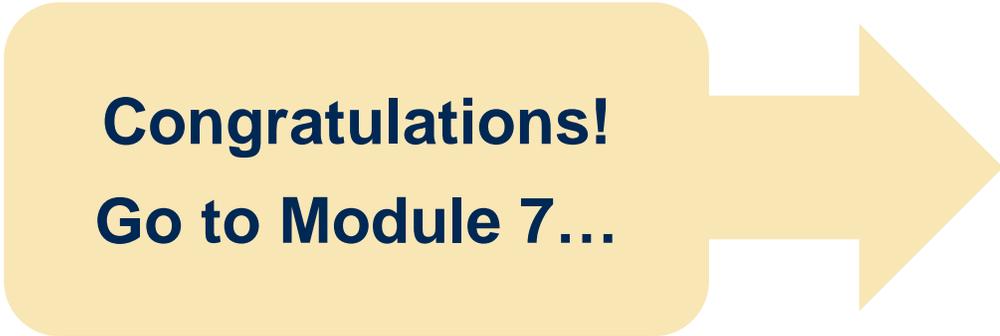
Module 6 Checkpoint

Have you reached your learning goals?

Review this list with your Respiratory Therapist:

- I can recognize the signs that my child is having difficulty breathing
- I can explain what is oximetry and how to monitor my child's oxygen saturation levels at home
- I can use oxygen in my home safely
- I can demonstrate how to use home oxygen equipment
- I can demonstrate how to give my child medication using a puffer (metered dose inhaler)
- I can demonstrate how to use a nebulizer give my child a nebulized medication to improve their breathing

When you are confident that you have achieved these learning goals you are ready to go to the next module.



Congratulations!
Go to Module 7...

Module 7

Daily care and activities for your child with a trach

Learning goals

When you finish this module you will be able to:

- Explain how the trach may affect your child's communication.
- Describe how to help your child bath or shower safely.
- Describe how the trach may affect your child's eating.
- Demonstrate what to do if your child vomits.
- Take safety measures to help your child play safely.
- Describe how you can organize and schedule your child's care
- Identify how to care for yourself as a caregiver at home



How can my child communicate?

Communication is very important to your child's speech and language development, play and building relationships in daily life.

A **Speech Language Pathologist (SLP)** will assess your child's communication skills and support their abilities to interact.

A Speech Language Pathologist can support the use of:

- A speaking valve.
- Strategies to coordinate breath and voice.
- Ways to encourage speech and language development.
- Different ways to communicate such as pictures, signs or tablets.



How can my child take a bath?

For babies, a sponge bath is the safest way to prevent water from entering the trach tube or stoma.

For young children, a tub bath is okay if an adult is there to help and watch them carefully. Make sure the water level in the tub is not near or above their neck. Take care that water does not splash into the trach tube.

Some older children may be able to shower, if they are able to follow safety measures. By using hand-held shower head, they can direct the spray of water below their neck. Again, make sure water does not splash or spray toward the stoma site and trach tube.



NEVER leave your child unattended in the bath.

If water enters the trach tube, suction the tube right away and if possible, have your child cough.

You will need to monitor your child closely.

How will the trach tube affect how my child eats?

Your child's health care team will assess your child's ability to eat.

If you have a baby:

- Your baby may be able to feed in the same way as babies without a trach.
- Your baby's sense of smell may be decreased, so they may not be as eager to feed at first.
- Burp your baby well so there is less chance of spitting up after feeding. Avoid having any spit up fluids enter the trach.
- Do not use a bib with a plastic backing that could cover the hole of the trach and interfere with their breathing.



If your child is older and eating solids, they may be able to continue eating as they did before having the trach.

If your child also has or needs a G-tube or a GJ-tube, your health care team will help you learn to feed your child and care for this tube.

If your child has difficulty swallowing, then an **Occupational Therapist** will assess your child's feeding and swallowing. They will make recommendations for eating and drinking such as your child's position, which textures are safe and signs of aspiration to watch for.

What if my child vomits?

- If your child vomits, turn their head to the side, away from the opening of the trach tube.
- If you think anything has entered the trach, suction the trach right away to clear your child's airway.
- If food or liquid comes through the trach when they are vomiting, suction the trach right away and thoroughly.
- If food has come through the tube, tell the health care team.



If your child vomits, food or fluid from the stomach may enter the lungs. This is called aspiration.

If you think your child has aspirated, watch your child for signs of infection and difficulty breathing. You will need to monitor your child closely and inform your health care team.

How can my child play safely?

Play is very important for your child's health and development, and for enjoying daily life.

Encourage your child to play as much as possible, with these extra precautions for their safety:

- ✓ Make sure your child is supervised at all times.
- ✓ Avoid toys that shed hair, fur or fuzz. These particles can enter their trach.
- ✓ Avoid toys that have small, removable pieces that could get lodged in their trach.



Can my child go swimming?

No, it is not safe for your child to swim. There is no way to stop water from going into the stoma. Any water that enters the trach can be aspirated into the lungs. This increases the risk of infection and even death.

Take extra care when your child plays around water, such as at a lake or beach. Remember that your child cannot protect their lungs from choking if they accidentally fall and water gets into the trach tube.

What should I consider when buying clothing?

Choose tops that do not have a high neck line. Clothing must not cover or sit too closely to the trach and stoma.



Creating a trach care schedule

You might be feeling overwhelmed with all of the care and cleaning that is involved in caring for your child's trach. There are many steps to care and many pieces of equipment that also need special care and cleaning.

It is helpful to create a routine or a schedule that will help you track when things need to be done. We can help you create a calendar to help you organize all of these activities. Below is an example of the daily, weekly and monthly care. Your RT will help you create a schedule for your child's specific needs.

Daily care
<input type="checkbox"/> Check/restock Go-Bag
<input type="checkbox"/> Check trach ties and change if needed
<input type="checkbox"/> Stoma care and change dressing (twice a day and as needed)
<input type="checkbox"/> Suction every 4 hours (minimum and as needed)
<input type="checkbox"/> Check suction machine and ensure it is charged
<input type="checkbox"/> Change HME
<input type="checkbox"/> Humidifier care (based on type of humidifier)
<input type="checkbox"/> Check oximeter alarm settings and ensure it is charged
<input type="checkbox"/> Clean reusable inner cannula or replace disposable inner cannula (if applicable)
Weekly care
<input type="checkbox"/> Change trach tube (could be Biweekly)
<input type="checkbox"/> Clean humidifier (based on type of humidifier)
<input type="checkbox"/> Clean suction canister and change suction tubing
Monthly care
<input type="checkbox"/> Change humidifier filter

Caring for yourself as a caregiver

We know how hard you have worked to get ready for your child's discharge home. You may be excited but also a little bit worried about taking care of your child at home. This is normal and your health care team is always here to support you and help you prepare for home. It is also important to make sure to care for yourself at home.

Families have found it very helpful to meet and speak with other families who have children with tracheostomies. These families can be great supports and can help answer your questions about home life. If this is something you might like please let your health care provider know so this can be arranged.

There are a few things you can do to help cope with all of the new changes when at home:

- Take some time for yourself. This might include planning for quiet-time, continuing hobbies or spending time with family and friends.
- Make sure to talk to your close family and friends so they can support you when at home. This may include arranging for visitors to come to your home.
- Take care of yourself which includes eating regularly and sleeping as much as you are able to.
- You might find it helpful to look into online support groups or websites where parents and caregivers of children with tracheostomies can discuss their experiences.
- Ask for help when you need it. Your friends, family and health care team are there to help. Please do not hesitate to contact your health care team if you are unsure of something or have any questions.

If you are having trouble coping or you are feeling that you need to talk to someone about how you are feeling, please reach out to your health care team.

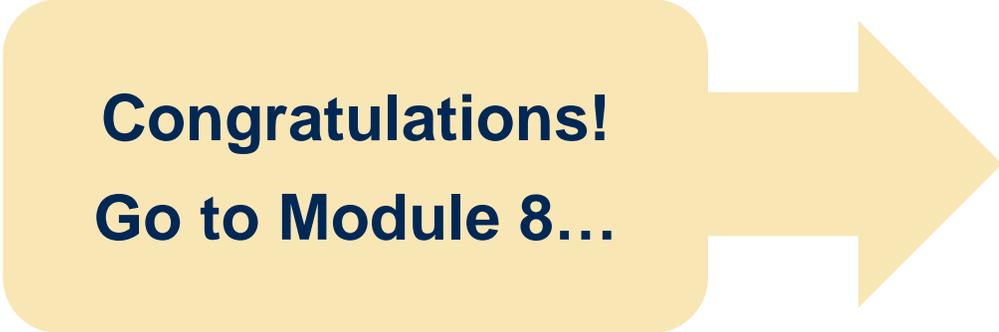
Module 7 Checkpoint

Have you reached your learning goals?

Review this list with your Respiratory Therapist:

- I can explain how the trach may affect my child's communication
- I can describe how to help my child bath or shower safely.
- I can describe how the trach may affect my child's eating.
- I can demonstrate what to do if my child vomits.
- I can take safety measures to help my child play safely.
- I can describe how you can organize and schedule your child's care
- I can identify how to care for myself as a caregiver at home

When you are confident that you have achieved these learning goals you are ready to go to the next module.



Congratulations!
Go to Module 8...

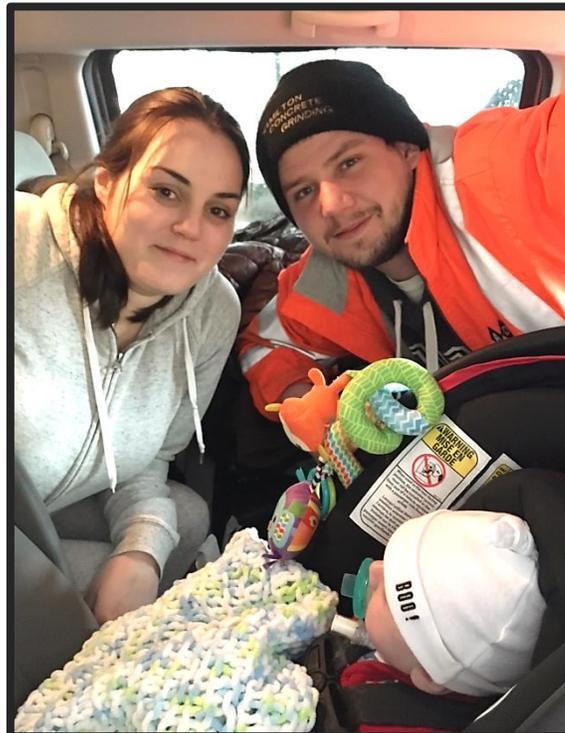
Module 8

Getting ready to leave the hospital and setting goals for the future

Learning goals

When you finish this module you will be able to:

- Explain how to prepare for discharge.
- Describe how to get your home ready for your child.
- Describe the steps towards discharge.
- Describe what funding is available and who can help you apply.
- Explain who will provide your home equipment and visit your home.
- Set goals for the future.
- Take safety measures when planning to travel with your child.
- Describe what a planned decannulation is and how it happens



What can I do to be ready to go home?

During your hospital stay, your health care team will help you prepare to take your child home. We call this discharge planning.

Learning

Preparing for discharge includes learning:

- ✓ How to care for your child's trach (through this training program)
- ✓ How to make your home safe for your child
- ✓ How to do CPR (CardioPulmonary Resuscitation)
- ✓ What to do in emergencies

CPR Training

All caregivers will need to have CPR training before to going home. The hospital provides CPR training to caregivers through the McMaster Children's Hospital Outreach Program. These courses are usually offered every few months so it is helpful to register early.

Care by parent

Before you leave the hospital, you will practice caring for your child by yourself. This "**Care by Parent**" time includes staying at your child's bedside and doing all of your child's care for 2 to 4 days continuously. This time will allow you to use your child's home equipment in hospital. Your health care team will be available to support you. They will not take part in your child's care, but can help if needed.

Your 'Care by Parent' days will help you gain confidence in your skills and will make you feel better prepared to take your child home.

Walks around the hospital

While your child is in the hospital, the Respiratory Therapist will go with your child and your family on walks around the hospital. When you have completed your CPR, simulation and training you can take your child for walks by yourself around the hospital. This will give you the chance to practice getting your child's equipment ready and allow you to develop confidence in independently taking care of their trach while still in hospital.

Car seat testing

Car seat testing is a test to see if your child:

- has any breathing problems while in their seat
- has any changes in oxygen saturations or desaturations
- needs special positioning to travel safely in the car seat

Car seat testing is completed on babies and children who will need a car seat when traveling. Car seat testing allows us to see if your child is comfortable in the car seat and that their breathing stays normal while traveling in the car.

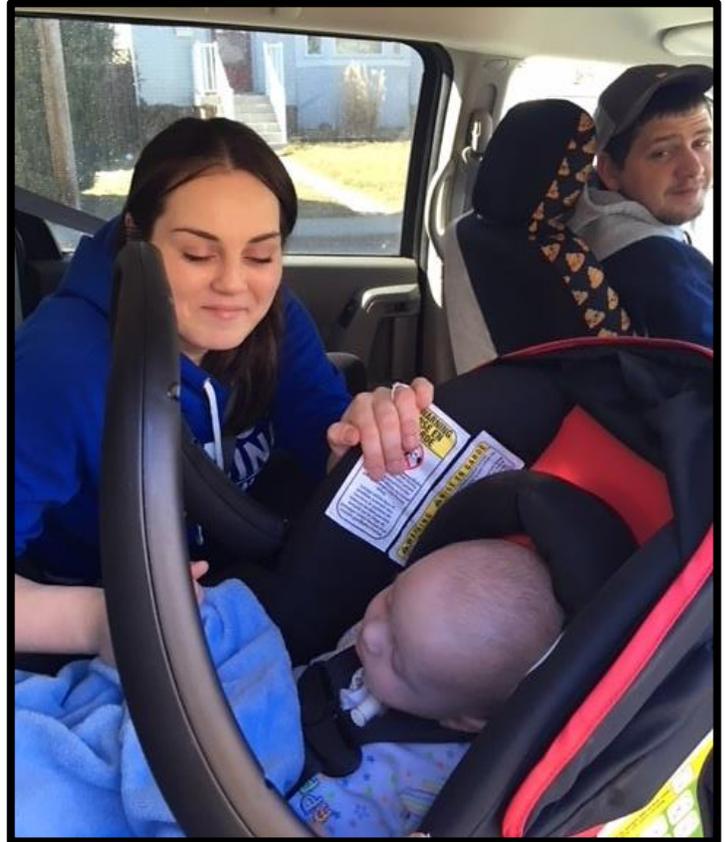
We will ask you to bring your child's car seat and base into the hospital before discharge. Make sure your car seat is approved based on current Canadian standards.

We will position your child in the seat and monitor their oxygen saturations. Your health care team wants to make sure their breathing and saturations do not change during the test. Once your child has remained in the car seat without changes for about 90 minutes, your child has passed their car seat test.



Car rides

We can also help you feel more comfortable with car rides and preparing your child's equipment in the car. Your health care team will help you get your child ready for a car ride and go with you to make sure everything goes smoothly. Follow your car seat manufacturer's instructions to place your car seat base in the car and make sure it is properly installed before your car ride. This car ride will allow you to ask questions and will help you gain confidence in taking your child for car rides.



We recommend having a fully trained caregiver sit beside your child in the car. Your child's oxygen saturations should always be monitored by an oximeter while in the car.



How do I get my home ready for my child?

There are many things you can do to make your home ready for your child and to help them stay safe while at home.

Phones	<ul style="list-style-type: none">• Make sure you have a phone for emergencies. It is helpful to have a phone in the areas where your child spends time, such as in the living room and near their bedroom.• Carry a cellphone at all times when you are out with your child. Always make sure the phone is fully charged.
Emergency phone numbers	<ul style="list-style-type: none">• Keep a list of emergency phone numbers by your phone (or in your cellphone contacts).• It's a good idea to also keep your address near the phone and in your Go-Bag for other caregivers or community nurses to use in case of an emergency since they may not know your address.• Keep another list in your parent binder or with your child's trach equipment.
Care Plan	<ul style="list-style-type: none">• Keep your Care Plan (with your child's name, date of birth, and list of medical needs) beside your home phone and with your Go-Bag.
House number	<ul style="list-style-type: none">• Make sure your house or unit number can be seen clearly from the road. In an emergency, this will help first responders find your home easily.• You may need to install a light above the number, so that it can be seen at night.
Electricity	<ul style="list-style-type: none">• Your health care team will tell your local power company that your child is dependent on electricity for their medical equipment. If there is a power failure, they can make sure your power is turned back on as soon as possible.• Make sure there are enough electrical outlets near your child's bed, so that all equipment can be plugged in without creating any hazards.• Keep a flashlight close to your child's equipment in case there is a power failure.

	<ul style="list-style-type: none"> • Make a plan in case the power is out for a long time. • You may need to take your child to a neighbour's or family member's house who has power. • In rural areas especially, it may be helpful to have a generator.
Storage	<ul style="list-style-type: none"> • You may need to rearrange your child's room, or add shelves or drawers to organize their trach supplies.
Smoking	<ul style="list-style-type: none"> • Do not allow anyone to smoke in your home or around your child. Remember that your child's airway cannot filter harmful particles away from their lungs. • Inhaling smoke increases your child's risk of getting infections or other lung problems.
Air quality	<ul style="list-style-type: none"> • Try to keep your home as clean and dust free as possible. • Do not use any powders or aerosol sprays around your child, as they can be inhaled through the trach into your child's lungs. • Do not burn incense or use scented candles. • Do not use cleaning products that contain chlorine bleach or ammonia near your child, as they can irritate your child's lungs.
Pets	<ul style="list-style-type: none"> • Your family can have pets. Try and keep your home as clean as possible, because pet hair can get into your child's trach. • Your pet should not sleep with your child or be on their bed.



Examples of equipment carts



This cart (purchased from Ikea) can help organize your child's bedside. Plastic trays fit into each level.

- Suction supplies
- Hand sanitizer
- Obturator labeled in plastic bag
- Suction equipment
- Go-Bag

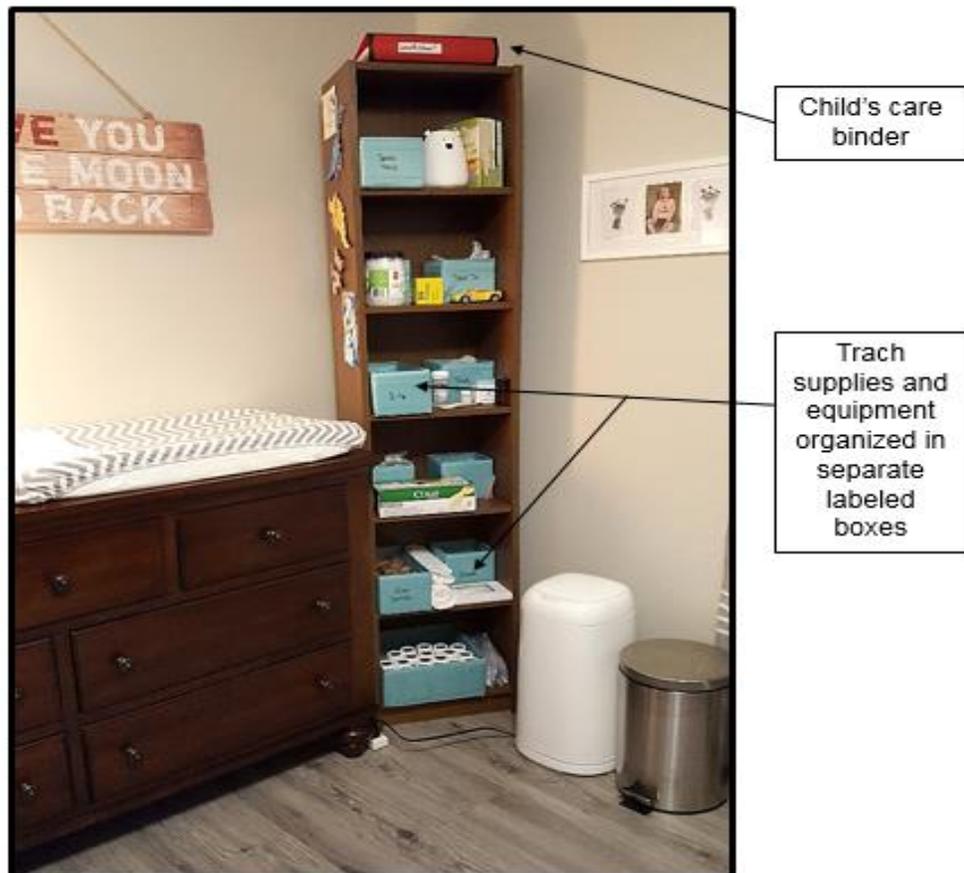
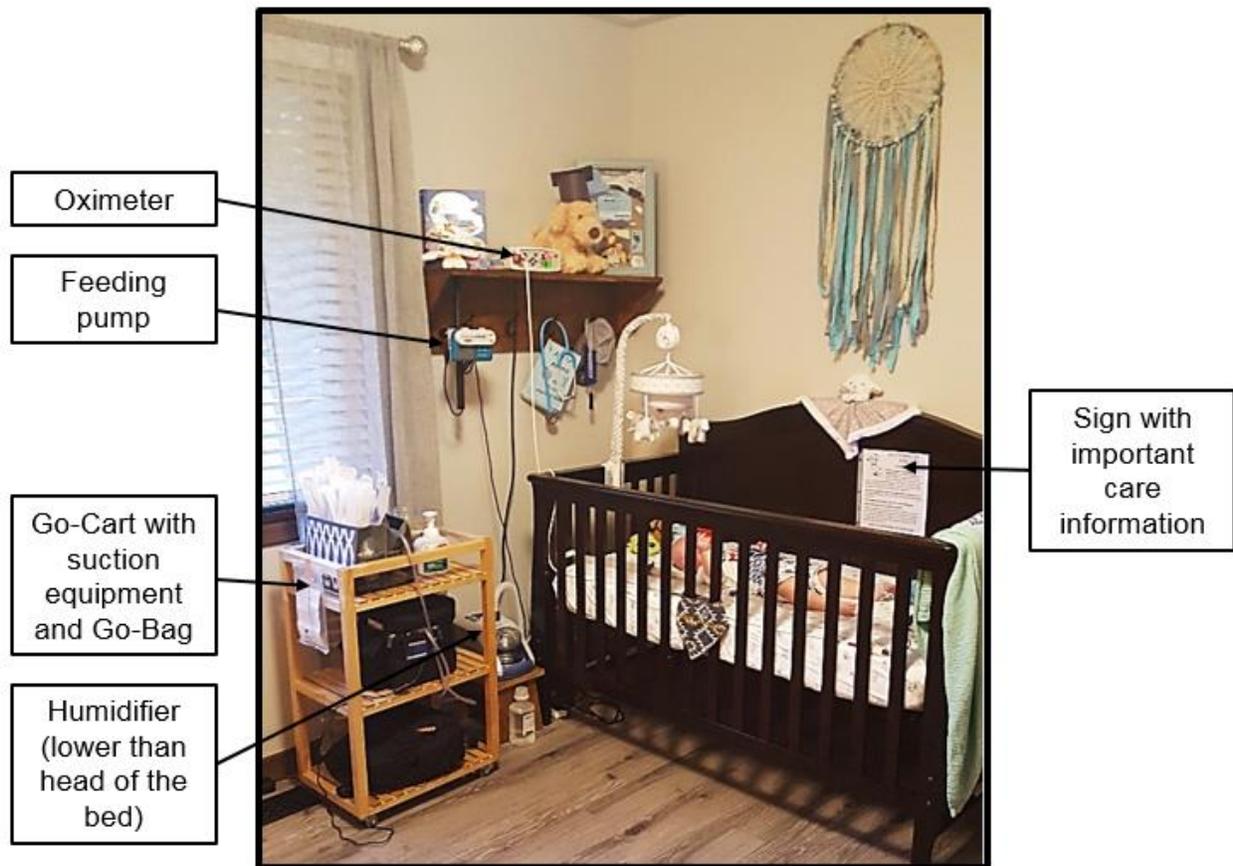


One family uses a "Go-Cart" that can roll from room to room (purchased from Ikea).



The "Go-Cart" can even go with your child outside

Examples of room set-ups



What do I need to know and do before leaving the hospital?

Use this checklist to make sure that all steps are completed before going home.

Hospital Discharge Checklist
Your child is medically stable
<input type="checkbox"/> Stable respiratory status, which includes: <ul style="list-style-type: none">• Oxygen requirement less than or equal to 40%• Stable blood gases• Healed tracheostomy stoma (established)• No spells requiring CPR for at least 1 month.• Stable plan and settings (no changes) in place for 2 weeks before discharge.
<input type="checkbox"/> Child is stable when using home equipment, including pulse oximeter, oxygen, suction and humidification equipment.
<input type="checkbox"/> Feeding is well established, using Home Feeding Pump.
Training and education completed
<input type="checkbox"/> Caregiver education training (using this book) completed.
<input type="checkbox"/> All trained caregivers have completed CPR training.
<input type="checkbox"/> Tracheostomy scenarios and simulation completed.
<input type="checkbox"/> Training on respiratory home equipment completed <ul style="list-style-type: none">• Suction equipment• Home oximeter equipment• Humidification equipment• Home oxygen equipment and supplies• Medical Compressor for nebulized treatments
<input type="checkbox"/> Training on enteral feedings and the use of the home pump completed.
<input type="checkbox"/> Teaching about medications completed.

Community supports

Referral to LHIN Home and Community Care (formerly CCAC)

- Initial referral date: _____
- Final referral date: _____

Respiratory Home Care Company

- Selected _____
- Arranged and it is confirmed that supplies are at home or hospital

Accessible Parking Permit application.

Community nurses arranged and are fully trained.

Equipment funding

Discussed approximate costs of equipment with family.

Discussed ADP funding.

Completed ADP Funding Application

- Ventilator Supplies (Oximeter and Resuscitator Bag)
- Respiratory Supplies (Trach and Suction)
- HOP (Home oxygen Program) with qualifying strip (if applicable)
- Enteral Supplies (Feeding)

Completed ACSD Application (is applicable).

Completed ODB Nutrition Products form for enteral feeds (if applicable).

Home equipment and supplies

All respiratory equipment has arrived at the hospital or home before discharge

- Additional Tracheostomies and trach care supplies
- Suction equipment and supplies
- Home oximeter equipment (from Ventilator Equipment (VEP) Pool)
- Humidification equipment and supplies
- Home oxygen equipment and supplies (if applicable)

<ul style="list-style-type: none"> • Medical Compressor (if applicable)
<input type="checkbox"/> All medical equipment has arrived at the hospital or home prior to discharge and includes: _____
Home preparation
<input type="checkbox"/> Family or caregiver home ready including electrical needs.
<input type="checkbox"/> Hydro company alerted to the child's electricity needs (letter).
<input type="checkbox"/> Alerted EMS dispatch of child's care needs (letter).
<input type="checkbox"/> List of contact numbers and "who to call and when".
Care considerations
<input type="checkbox"/> Hospital walks (independent walk by caregivers) off the unit.
<input type="checkbox"/> 'Care by Parent' completed using home equipment (at least 2 to 4 days)
<input type="checkbox"/> Caregiver tour (Complex care, Intensive care, Clinics, Emergency).
<input type="checkbox"/> Car seat testing completed (if applicable).
<input type="checkbox"/> Trial car ride completed.
Prescriptions and treatment plan
<input type="checkbox"/> Prescriptions for medications given to family.
<input type="checkbox"/> You have received a medication schedule.
<input type="checkbox"/> Prescription and recipe for tube feedings given to family (if applicable).
<input type="checkbox"/> You have received a feeding schedule.
<input type="checkbox"/> Prescription for oxygen and respiratory equipment (suction and humidification) given to Respiratory Home Care Company.
<input type="checkbox"/> Immunizations (vaccines) and flu shots are up-to-date.
<input type="checkbox"/> Arrangements for RSV prophylaxis (if applicable) has been organized.

Follow-up

Complex Care Team follow-up arranged.

Date, time and place: _____

Community pediatrician follow-up arranged.

Date, time and place: _____

Family physician follow-up arranged.

Date, time and place: _____

Ear, Nose and Throat (ENT) follow-up appointment arranged.

Date, time and place: _____

Other follow-up: _____ (if applicable)

Date, time and place: _____

Other follow-up: _____ (if applicable)

Date, time and place: _____

You have received a copy of the discharge summary.

You have received an ALERT card.

You have a received a copy of your child's Comprehensive Care Plan.

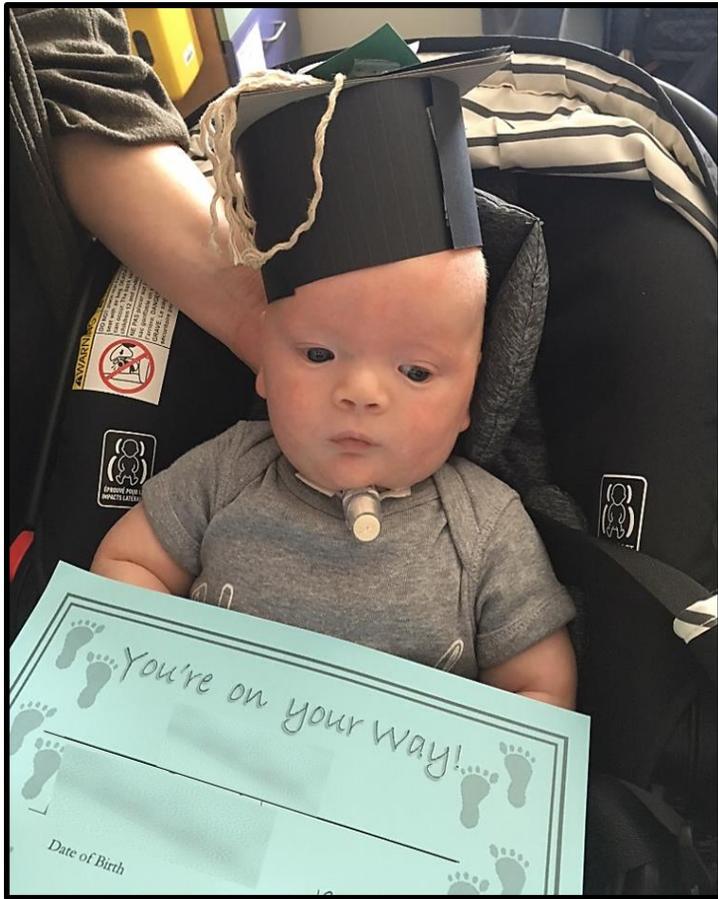
Completed LHIN (formerly CCAC) referrals for:

- Respiratory Therapist (RRT)
- Community Nursing
- Rapid Response Nurse and RRT

And if applicable:

- Occupational Therapist (OT)
- Physiotherapist (PT)
- Social Work (SW)
- Registered Dietitian (RD)
- Other _____

Follow-up blood tests ordered (if applicable)



What funding is available for home equipment?

The supplies you need to care for your child at home can be expensive.

The Ontario Ministry of Health and Long-Term Care has these programs to help you pay for them:

- Assistance for Children with Severe Disabilities (ACSD)
- Assistive Devices Program (ADP)

Your health care team and Social Worker can help you learn about these programs and apply for funding.

What is the Assistance for Children with Severe Disabilities (ACSD) Program?

ACSD provides funding to families with low and moderate incomes to help with the costs related to a child's disability.

You must apply for this funding. To be approved for funding, your child must:

- Live in Ontario
- Live at home with your family (or a legal guardian)
- Have a severe disability

How can I apply?

Fill out and application form based on your child's equipment needs and your income. Your Social Worker will help you fill out this form.

The amount you receive will depend on:

- Your child's age
- Your household's gross income
- The number of children in your home
- The severity of your child's disability
- The extraordinary costs related to your child's disability

How do I receive this funding?

The amount of funding that your child receives depends on your child's expenses and your family's income.

- If you qualify for ACSD, you will receive 100% of the grant that the Ministry of Health has allotted for a child's tracheostomy care.
- If you do not qualify for ACSD, you are still able to receive funding for 75% of the grant through the ADP Program. The next section explains ADP funding.

What is the Assistive Devices Program (ADP)?

ADP provides funding to help people pay for medical equipment and assistive devices that they will need at home.

Your health care providers will help your family apply for this funding when your child is getting ready to go home.

To be approved for funding, your child must:

- ✓ Live in Ontario
- ✓ Have a valid Ontario health card
- ✓ Have a physical disability that requires equipment and supplies for 6 months or longer

If approved, your family will receive funding for 75% of the grant that the Ministry of Health and Long-term Care has allotted for tracheostomy care, supplies and equipment. There is a limit to the amount of supplies and equipment that will be covered by ADP.

ADP will provide funding for:

- Tracheostomy tubes
- Tracheostomy supplies
- Suction device supplies
- Speaking valves
- Home oxygen

Your health care team will help you apply for ADP funding and learn what supplies and equipment are covered.

How do I receive this funding?

When your application has been approved, the total cost of the supplies and equipment you need for a year will be divided into 4 payments. You will receive one payment every 3 months.

Here is an example:

	Supplies and equipment			
	Tracheostomy Tubes	Tracheostomy Tube Supplies	Suction device supplies	Speaking Valves
If the total cost for one year is...	\$900	\$1500	\$180	\$420
	↓	↓	↓	↓
You will be paid this amount every 3 months...	\$225	\$375	\$45	\$105

Please note!

ADP funding is 75% of the grant that the Ontario Ministry of Health and Long-term Care has allotted for tracheostomy care, supplies and equipment.

Here is an example if you also qualify for ACSD funding:

	Supplies and equipment			
	Tracheostomy Tubes	Tracheostomy Tube Supplies	Suction device supplies	Speaking Valves
If the total cost for one year is...	\$1200	\$2000	\$240	\$560
	↓	↓	↓	↓
You will be paid this amount every 3 months...	\$300	\$500	\$60	\$140

**Please
note!**

If you also qualify for ACSD funding, this amounts to 100% of the grant that the Ontario Ministry of Health and Long-term Care has allotted for tracheostomy care, supplies and equipment.

Do we need to renew our funding?

Yes, you will need to renew your funding every 2 years. You will receive a renewal form in the mail before 2 years. At this time, if there are no changes in your child's equipment needs, then you will sign and return the form. It is important to do this, because if this is missed it could cause a delay in receiving your funding. Therefore, if you change your address you should update your address with ADP and ACSD as soon as possible to prevent any delays.

Who will provide my home equipment?

In this section we will review the services offered by these home equipment companies:

- Ventilator Equipment Pool
- Respiratory Home Care Companies

What is the Ventilator Equipment Pool (VEP)?

VEP supplies ventilators and related equipment use at home.

The VEP is part of the Assistive Devices Program (ADP). When your ADP application is approved, VEP will provide the loaned equipment free of charge until no longer needed.

The home equipment provided by VEP includes:

- Home oximeters
- Sat probes
- Cough assist (if applicable)

VEP also provides:

- A home visit with a Respiratory Therapist Clinical Educator for each piece of VEP equipment required. They will review your home equipment and the use of it.
- Telephone support from a Respiratory Therapist. They are on-call 24/7 to answer questions or concerns about your equipment.
- Video conferencing with a Respiratory Therapist. They will review your home equipment and provide support online.

What is the role of respiratory home care companies?

Respiratory home care companies provide the respiratory equipment and tracheostomy supplies that your child needs at home.

Each company has health care providers who will supply the equipment and teach you how to use it. They may come to your home or provide help over the phone.

The equipment provided includes:

- Home Oxygen Equipment
- Tracheostomies and Tracheostomy supplies
- Suction Equipment and supplies
- Humidification Equipment

In Ontario there are many respiratory home care companies. Your Respiratory Home Care Coordinator will discuss your options based on your area. You will decide which company meets your needs.

Families have found it helpful to ask the respiratory home care company these questions to help them make their decision:

- How much will my child's trach and equipment cost?
- Do you have a Respiratory Therapist and what does their role involve?
- Are you able to deliver to our home?
- What are your hours and is there an emergency contact number?

What is the role of the Local Health Integration Network (LHIN)?

LHINs are not-for-profit organizations that plan, coordinate and fund local health services in 14 areas across Ontario. The Hamilton Niagara Haldimand Brant (HNHB) LHIN also includes Burlington and most of Norfolk.

The LHIN provides home and community care services. This was previously done by the Community Care Access Center (CCAC). As this is a recent change, you may still hear people say CCAC when talking about home care.

A LHIN Care Coordinator will assess your child's needs and make sure that your child and your family receive the ongoing care and support you need, when you need it.

Your child may be eligible to receive services from:

- nurses
- respiratory therapists
- registered dietitians
- social workers
- occupational therapists
- physiotherapists
- speech language pathologists
- personal support workers



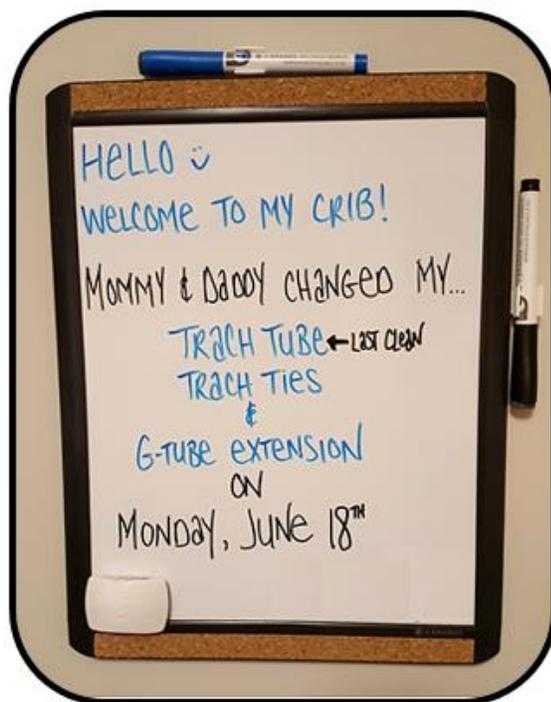
Home Nursing

Before discharge, the LHIN Coordinator will meet with you to assess your needs for home nursing. The LHIN Coordinator will make sure that your area where you live will have trained nurses to take care of your child before your discharge home.

When at home, it will be important to sit down with nurses that are new to caring for your child and talk about your child's care. It is important that the nurses feel comfortable with your child and their care and that you also feel comfortable with the nurses in your home.

Families have suggested doing these things to help your nurse care for your child:

- Make a list of important information you would like your nurses to know about your child. This list could include:
 - How they can comfort your child
 - What your child likes and does not like
 - Helpful hints about play and interests
 - Personalized trach care instructions
 - Daily routine and feeding schedule (if applicable)
- Create signs for your home nurses as care reminders. This may help communicate important things and personalize your child's care. For example, a white board can be used to keep track of dates.



It may be helpful to use whiteboards like this to track care such as trach changes, reminders, dates or important changes in care.

- Have a calendar dedicated to your child's care. This could include your child's trach changes, dates when equipment cleaning is due, nursing scheduling, prescription refills, equipment ordering and your child's appointments.
- Have hand sanitizer available in your child's bedroom and common areas. Families have also found it helpful to create signs to kindly remind everyone to sanitize their hands.
- Count all of your supplies or have the nurses do this once a week to avoid running out of supplies. This will give you lots of notice to order supplies. You will need to order supplies regularly from your home care company.

Speak with your nursing agency or Community LHIN Coordinator if you have any concerns or questions about your nursing.



How can we set goals for the future?

What are goals?

- ✓ Things you wish to achieve
- ✓ Things that take action to achieve
- ✓ A plan or direction
- ✓ Statements that are meaningful to you

Why is setting goals helpful?

- Goals create a plan and give direction to help you make changes.
- Goals help you be successful.
- Goals provide a structure to apply new techniques and strategies that you are learning in this training program.
- Goals help you focus on your abilities.
- Achieving goals helps you feel more self-confident.
- Achieving goals can give you the confidence to set more challenging goals in the future.

Tips for successful goal setting

- Define your own goals.
- Goals should be related to your family's needs and values.
- Define what steps you need to take to accomplish your goals.
- Be realistic with what you are setting out for your child and family.
- Pay attention to your 'gut instinct'.
- See yourself and your family arriving at your goal and being successful.
- When you have achieved one goal, set another.

Example of a family goal:	<i>We would love to take our child to visit their grandparents who live a few minutes down the road from our house.</i>
----------------------------------	--

How can the health care team help us?

We can help you:

- ✓ Identify goals for your child and family.
- ✓ Think about which goals are most important.
- ✓ Break your goals into smaller steps that your child and family can manage.
- ✓ Identify how the health care team can help you achieve your goals.
- ✓ Set a realistic timeline for your goals.

The worksheets on the next pages can help you keep track of your goals.



Our family's goal setting worksheet

Our goal is:

Goal start date:

**Target date or timeline
for reaching our goal:**

**Things that will help
us reach our goal:**

**Steps to reaching
our goal:**

**I know we have
reached the goal
when:**

Our family's goal setting worksheet

Our goal is:

Goal start date:

**Target date or timeline
for reaching our goal:**

**Things that will help
us reach our goal:**

**Steps to reaching
our goal:**

**I know we have
reached the goal
when:**

Our family's goal setting worksheet

Our goal is:

Goal start date:

**Target date or timeline
for reaching our goal:**

**Things that will help
us reach our goal:**

**Steps to reaching
our goal:**

**I know we have
reached the goal
when:**

Our family's goal setting worksheet

Our goal is:

Goal start date:

**Target date or timeline
for reaching our goal:**

**Things that will help
us reach our goal:**

**Steps to reaching
our goal:**

**I know we have
reached the goal
when:**

How can we plan to Travel?

Although you may not feel comfortable traveling initially, you may want to set goals to travel in the future if this is something that your family would enjoy.

<p>Discuss your plans with the Health care team</p>	<ul style="list-style-type: none"> • Discuss your vacation plans with your health care provider in advance. • Tell your health care provider where you would like to go, how long you plan to be away and who is going on the trip to support your child. • Along with your health care team, make sure you have enough equipment and medication for your trip.
<p>Destination planning</p>	<ul style="list-style-type: none"> • Make sure your vacation destination will be in a safe environment and is close to medical services in case your child needs to be seen while away. • When you travel you want to consider the weather in that area. Some areas will be drier and others will be more humid than your child is used to, and this could affect your child's secretions. For example, in dry areas your child may require more humidification and in more humid areas they might require more suctioning and less added humidification.
<p>Go-Bag and Medications</p>	<ul style="list-style-type: none"> • Always carry your go-bag in your carry on luggage, as well as everywhere your child goes. • Make sure you have all of your child's medications with you and that you have an updated list of medications.
<p>Travel Insurance</p>	<ul style="list-style-type: none"> • Purchase additional travel medical insurance if you are traveling outside of Canada. • Bring a copy of this travel insurance with your child wherever you go.
<p>Traveling by Plane or Train</p>	<ul style="list-style-type: none"> • If you will be flying to your destination, work with your health care team to make arrangements with the airline or train company for your child's oxygen and equipment needs. • They will need a copy of your oxygen prescription and may have other questions to ensure proper seating is arranged for your child.



Planned decannulation

If your child's need for the tracheostomy has resolved then your health care team may plan for decannulation. A planned **decannulation** is the removal of a tracheostomy tube when it is no longer needed. Your ENT doctor and health care team will decide if and when your child is ready for decannulation. In preparation for decannulation, your ENT doctor may prescribe corking trials. A corking trial is when you place a plastic cap on the trach tube for a specific period of time to assess whether your child can breathe through their mouth and nose. If the trial is successful, the trach may be removed in hospital. Often the stoma will close on its own. A dressing will be placed the stoma until the stoma is closed. For some children, the ENT doctor may decide a stitch is also needed to close the stoma.



After your child's trach is permanently decannulated it is important that you:

1. Notify ADP that your child's trach has been removed.
2. Notify your home care company the trach has been removed.
3. Contact the Ventilator Equipment Pool (VEP) to arrange a return of your loaner equipment (such as oximeter) when your health care provider tells you that you no longer need your equipment.
4. You may contact your health care provider for suggestions about what you can do with any unused tracheostomy supplies and equipment.

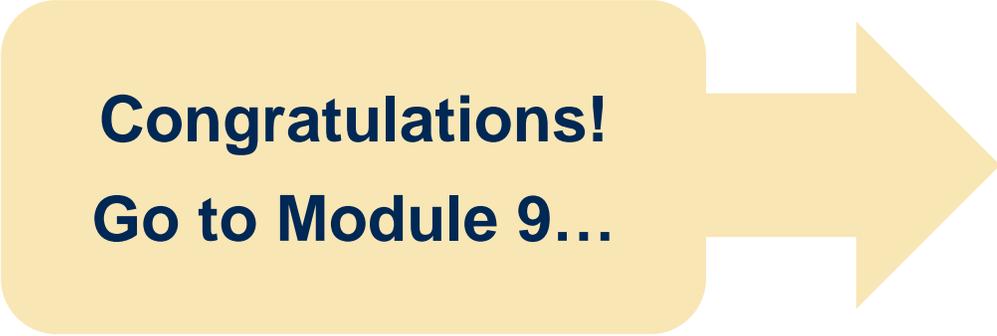
Module 8 Checkpoint

Have you reached your learning goals?

Review this list with your Respiratory Therapist:

- I can explain how to prepare for discharge
- I can describe how to get my home ready for my child
- I can describe the steps towards discharge
- I can describe what funding is available and who can help me apply
- I can explain who will provide my home equipment and visit my home
- I can set goals for the future
- I can take safety measures when planning travel with my child
- I can describe what a planned decannulation is and how it happens

When you are confident that you have achieved these learning goals you are ready to go to the next module.



Congratulations!
Go to Module 9...

Understanding how to manage emergencies

Learning goals

When you finish this module you will be able to:

- Explain how to prevent mucous plugs
- Demonstrate how to manage mucous plugs
- Explain how to prevent accidental decannulation
- Demonstrate how to manage accidental decannulation
- Explain how to prevent bleeding
- Demonstrate how to manage equipment failure



How to manage emergencies

We have now taught you many skills to care for your child's tracheostomy tube and hope that you are feeling more comfortable and confident. It is important to also learn how to care for your child if anything goes wrong and learn what to do in an emergency. There are a few things that could happen that could cause your child's breathing to become distressed and you will need to act quickly to help them. We will now discuss some of these situations and review these scenarios so that you will feel more confident if they were to happen.

What is a mucous plug?

A **mucous plug** is a collection of thick secretions that can get stuck in or at the end of the trach tube. This mucous can block the tube and prevent airflow from properly moving through the trach. Any size or type of trach can get a mucous plug. It is more common for smaller tracheostomies to have mucous plugs than larger trach tubes. When mucous is thicker, mucous plugs are also more common.

Signs of a mucous plug

- Increased work of breathing or respiratory distress.
- Child complains of difficulty breathing or becomes anxious or looks scared.
- You hear a whistling sound from the trach tube.
- Child is making sounds when they normally would not or their voice is louder.
- It is difficult or you are unable to pass a suction catheter through the tube.
- Air movement through the tube is decreased or absent.



It is important to notice these signs and act quickly to help remove this mucous plug and help your child breathe properly.

Preventing mucous plugs

You can help prevent mucous from building up and forming a mucous plug by making sure your child:

- Is getting proper humidification.
- Uses an HME during the day while awake.
- Uses cool or heated humidification for all naps and while sleeping.
- Is suctioned as needed so that mucous does not build up in the trach tube.
- Is getting enough fluids to stay hydrated.
- Is getting their trach tube changed when their trach change is due each week.



If your child is having lots of mucous plugs or more than they did before, please contact your health care team.

Accidental decannulation

Accidental decannulation occurs when the trach tube comes out of the stoma unplanned. This can happen for many reasons. The child may pull on the trach tube, oxygen or humidification tubing or the tubings may get caught on something. Sometimes the trach ties become too loose and the trach tube falls out.

Signs of an accidental decannulation

- Your child shows signs of increased work of breathing or respiratory distress.
- Child complains of difficulty breathing or becomes anxious, or looks scared.
- Child is making sounds when they normally would not or their voice is louder.
- You can see that the tube is coming out or is not sitting in the stoma properly.
- Air movement through the trach tube is decreased or absent.

Preventing accidental decannulation:

Prevent accidental decannulation by making sure your child:

- Has secure trach ties by checking for correct finger spacing.
- Has trach ties are that are working properly which includes checking that the Velcro is sticking well and the ties are not damaged.
- Is constantly supervised
- Is not tangled in their tubing and their tubing is not able to dangle where it could be pulled on
- Does not pull on their trach tube

Bloody Mucous

Bright Red Mucous

You should not see bright red blood coming from the trach tube when suctioning. If you see more than a teaspoon of bright red blood this could be a sign of a more serious issue and you should call 911 to take your child to the hospital.

While waiting for the ambulance, make sure your child receives humidification and oxygen (if applicable) and that you are monitoring their airway closely to make sure they are breathing.

Blood streaked or blood tinged mucous

Mucous that has small streaks of blood or is blood tinged making it discoloured is not an emergency situation and you do not have to call 911. Blood tinged secretions is still a concern and should not be ignored.

Blood tinged mucous may be a sign that:

- Suctioning may have caused some damage to their trachea
- Prolonged or increased coughing may have caused irritation to their airways
- There is granulation tissue at the end of the trach tube
- Your child's airway is too dry and needs more humidification
- Your child is coming down with a respiratory infection

Please
note!

Blood tinged secretions can be normal for the first 24 hours after a trach change due to some irritation to the trachea when inserting the trach tube.

Preventing bleeding

You can help prevent bleeding by making sure:

- All caregivers are suctioning to the proper measurement so that the suction catheter does not go beyond the trach tube.
- Your child is getting enough humidification
- Your child is not getting a respiratory infection

Equipment Failure

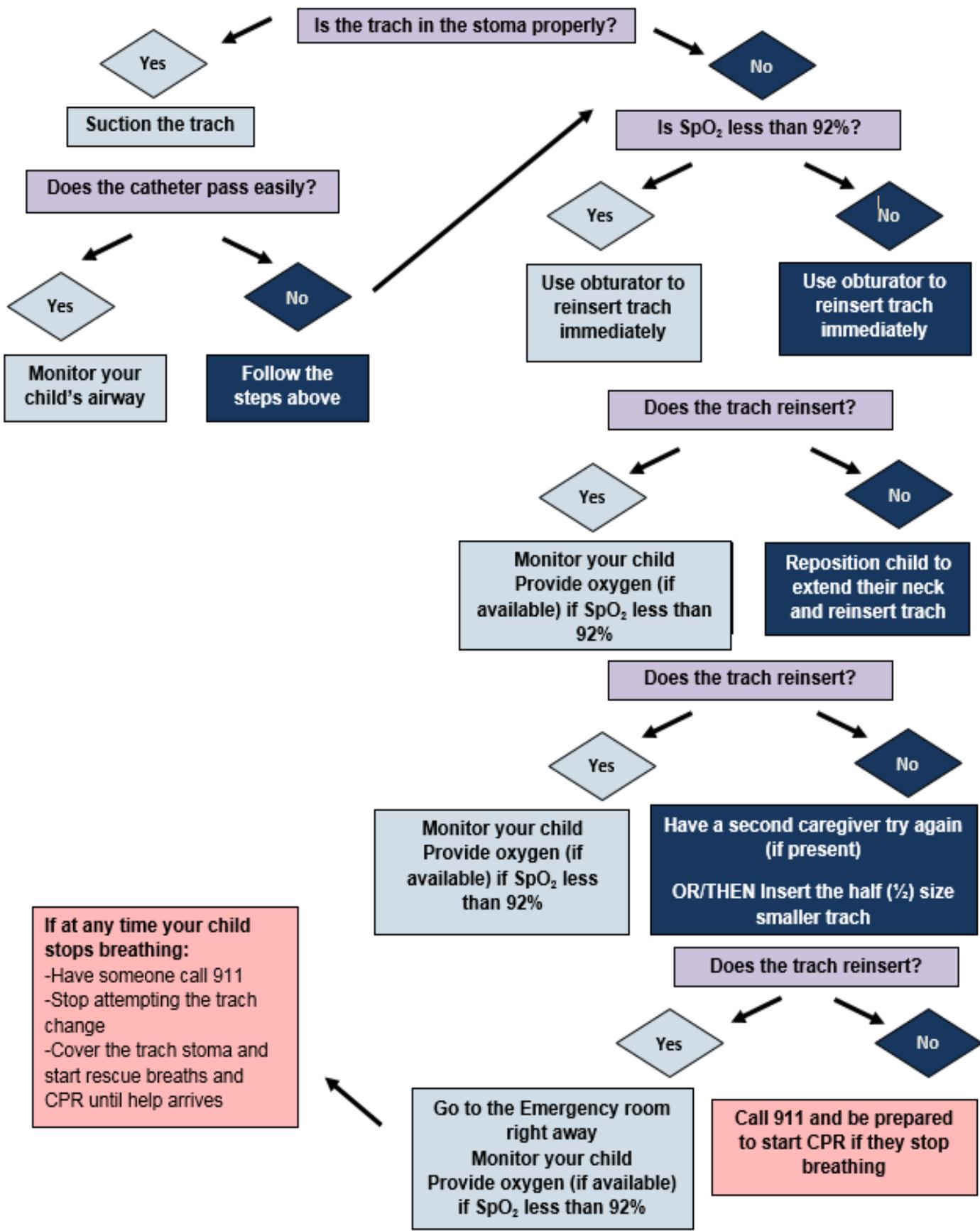
Equipment failure occurs when your electronic tracheostomy equipment stops working or fails to work properly. For example, your suction or oximetry equipment could suddenly stop working properly. This can happen at any time and you will need to know what steps you would need to take to make sure your child is safe. We will help you trouble-shoot your equipment and learn the steps you need to take if you run into problems with your equipment.

Preventing equipment failure

You can help prevent equipment failure by making sure:

- Your equipment always has charge or battery life.
- You charge your equipment as soon as you return home.
- You check that your equipment is working properly often.
- Your equipment is cleaned as often as you are instructed.
- You notify your equipment supplier if you are having problems or notice any changes with your equipment.

Child has an increased work of breathing



Caregiver goes to suction child and suction equipment is not working properly

Is your child having trouble breathing?

Yes

Suction the trach right away using Emergency Back-up syringe suction.

When your child is suctioned and comfortable

Troubleshoot and check the suction equipment
-Check power and battery
-Check connections

If you are experiencing power failure:

-Make sure you follow your power failure emergency plan

No

Troubleshoot and check the suction equipment
-Check power and battery
-Check connections

Are you able to solve the problem?

Yes

Make sure to keep checking the equipment.
If you continue to have problems then call your Respiratory Home care company.

No

Call your Respiratory Home care company right away and continue to use your Emergency Back-up syringe suction.

Module 9 Checkpoint

Have you reached your learning goals?

Review this list with your Respiratory Therapist:

- I can explain how to prevent mucous plugs
- I can demonstrate how to manage mucous plugs
- I can explain how to prevent accidental deccannulation
- I can demonstrate how to manage accidental deccannulation
- I can explain how to prevent bleeding
- I can demonstrate how to manage equipment failure

When you are confident that you have achieved these learning goals you are ready to go to the next module.



Congratulations!
Your modules are
complete!



Congratulations!

Thank you for your time and dedication during your education!

We hope that you are feeling much more comfortable and confident caring for your child's tracheostomy.



We are very excited to see you go home soon! At home we will continue to support you and will be here if you need us!



Thank you!

We would like to thank all of the children and families who supported the development and review of this education material. We could not have made this possible without them!



Additional Resources

Complex Care Kids Ontario (CCKO)

<http://www.pcmch.on.ca/health-care-providers/paediatric-care/complex-care-kids-ontario/>

Ontario Ventilator Equipment Pool:

<http://ontvep.ca/>

Ontario Assistive Devices Program (ADP)

<https://www.ontario.ca/page/assistive-devices-program>

Glossary of Terms

A		Page
Abdominal Muscles	The muscles that lie over the stomach and belly that can help you breathe when a more forceful breath or cough is needed.	20
AeroTrach	A device that is used to help your child inhale their metered dose inhaler (MDI) or puffer. An AeroTrach delivers more medication to the lungs than using the MDI alone.	129
Alveoli	Tiny air sacs at the end of the bronchioles in your lungs. These air sacs are surrounded by tiny blood vessels called capillaries that move oxygen into the blood and allow you to breathe out carbon dioxide.	18
Airvo Humidifier	Home and hospital humidification device that can deliver heat and moisture when placed over your child's trach. An Airvo can also be used to deliver oxygen with the humidification.	71
Aspiration	When food or fluid enters your child's lungs. This can happen when your child vomits or if your child does not swallow their food properly.	141
B		Page
Bivona Tracheostomy Tubes	A brand of tracheostomy tubes that are made of silicone.	35
C		Page
Capillaries	The tiny blood vessels that move oxygen into the blood and help move carbon dioxide so that it can be breathed out and will leave the body.	18
Carbon Dioxide	A component of the air that cannot be used by the body. This waste product needs to be filtered out of the body by the alveoli and breathed out by the lungs.	18
Carina	The end of the windpipe (trachea). If you were to insert a suction catheter past the tracheostomy and down the trachea, you would hit the carina. The carina is where the airway separates into the left and right bronchi.	18
Compressor	Respiratory device that is used to give a nebulized treatment.	132
Cool-mist humidification	A home humidification device uses a compressor and a nebulizer to nebulize sterile water into a mist for humidification. This room temperature mist.	75

Cork	A plastic cover that fits over the opening of the trach. This cork blocks the air from entering the trach and is used when you want the child to breathe around the trach tube, through their nose and mouth, using their upper airway. This cork can also help the child make sounds or speak. However, it is not always an option for all tracheostomies.	39
Cuffed Trach Tube	A trach tube with a cuff has a balloon at the end. When the balloon is inflated, it forms a seal against the walls of the trachea that stops air from flowing up through the vocal cords into the mouth and nose.	100
D		Page
Decannulation	Occurs when the trach tube is removed from the stoma. This can happen accidentally, for example, if the tube is pulled on while the child is playing or your health care team can plan for decannulation when your child no longer needs the trach tube to breath.	176
Deep Suctioning	A suction technique that allows you to suction the tracheostomy tube as far as the carina. Insert a suction catheter into the trach tube until you hit the carina, pull back suction catheter and apply suction.	56
Diaphragm	A large muscle that lies under the lungs and helps with breathing. When the diaphragm contracts, it moves up and out, pulling air into the body.	19
E		Page
Epiglottis	A flap that covers the entrance of the larynx (voice-box) during swallowing to prevent food or drink from entering the airway and into the lungs.	17
F		Page
Flange	The flat piece of plastic at the top of the trach tube that lies against the child's neck. The trach ties secure the flange, helping hold the trach to the child's neck.	30
G		Page
Gastric Tube or G-tube	A feeding tube that enters your child's stomach from their abdomen and allows you to feed your child using a feeding bag. Your health care team will help you learn how to use your child's G-tube.	77
"Go-Bag"	The supplies that are needed anytime the child leaves their bedside or room. Put all of this equipment in a bag and take it with you everywhere you go.	88

Granuloma	Extra tissue or scarred tissue growth that can grow on the stoma. Suctioning or rubbing by the trach tube flanges can cause granulomas to worsen or bleed.	45
H		Page
Heat Moisture Exchanger (HME)	A small humidification device that fits on the end of the tracheostomy tube that traps heat and moisture in the air that your child breathes out and then when the child breathes in the incoming air is humidified.	70
Humidification	Occurs when the air is warmed and moistened. Normally the air we breathe is warmed and moistened by our nose and mouth when we breathe in. When your child has a trach, the air does not get humidified and devices can be attached to the trach to help humidify the air.	75
I		Page
Inner Cannula	A smaller tube that fits into the outer cannula of the trach tube. This cannula can be removed quickly if it becomes blocked with mucous.	70
Intercostal Muscles	The muscles between the ribs that can be used to help you breathe when a more forceful breath or cough is needed.	20
L		Page
Larynx	Your voice box that is located at the top of the trachea. The larynx protects the airway and helps you build up pressure for a strong cough. The vocal cords make sounds when air passes through them.	17
M		Page
Masimo Home Oximeter	This is a brand of home oximeter that measures your child's oxygen saturations at home.	119
Measured Suctioning	A suction technique where a suction catheter is inserted into the tracheostomy based on a measurement in cm. This measurement would allow the suction catheter to reach just beyond the trach tube.	55
Metered Dose Inhaler (MDI)	Also referred to as a puffer that turns liquid medication into tiny particles (aerosol) that can be inhaled through the trach into the child's lower airways and lungs.	129
Mucous Plugs	A collection of thick secretions that can get stuck in or at the end of the trach tube preventing airflow from properly moving through the trach.	180

N		Page
Nebulized Medication	A medication that comes as a liquid but is turned into a mist by a compressor, so that it can be inhaled.	132
O		Page
Obturator	A small, thin plastic tube that fits into the inside of the tracheostomy tube and is used to help insert the trach tube into the stoma. Every trach tube has a special sized obturator which must be kept with the trach at all times.	31
Oximetry (Pulse Oximeter)	The device that measures your child's oxygen saturations. A probe is attached to your child and their oxygen saturations and heart rate will appear on the monitor.	116
Oximetry Study	When your health care provider uses your oximeter to track your child's oxygen saturations for a period of time.	122
Oximetry Probe	A probe, similar to a sticker or Band-Aid that is placed on your child's fingers or feet and it measures your child's oxygen saturations and heart rate.	116
Oxygen	A gas in the air that is the "fuel" our bodies need to live and grow. Oxygen is breathed in through the lungs and sent to the rest of the body.	116
Oxygen Concentrator	A home oxygen machine that makes oxygen. It can be attached to your home humidification equipment. An oxygen concentrator uses electricity and is normally part of your child's bedside equipment (if oxygen is needed).	126
Oxygen Cylinder	A container of oxygen that comes in a small wheeled cart or carry bag. This cylinder can deliver oxygen at different levels without electricity. Since oxygen cylinders do not use electricity, they can be used when your child is traveling.	127
Oxygen Saturation Level	The percent of oxygen that is getting from the air in your child's lungs into their blood. Based on your child's condition, your health care team will set a range for your child's normal oxygen saturation level.	115
P		Page
Passy-Muir	Is a common brand of speaking valve. This company makes many different types of speaking valves.	82
Q		

R		Page
Room Air	The air around us contains 21% oxygen. When your child is not receiving any oxygen we say that they are on “room air”.	125
S		Page
Shiley Tracheostomy Tubes	A brand of tracheostomy tube that is made of Polyvinyl Chloride (PVC) plastic.	34
Skin Sutures	Two surgical stitches that are thread through the flange of the trach and your child’s skin after surgery. They help to hold the new tracheostomy in place.	10
Speaking Valve	An attachment that fits on the end of the trach tube. It is a one-way valve that lets air enter the trach tube as your child breathes in. It does not let air out of the tube when your child breathes out, making air move up the upper airway out of the nose and mouth. This may help your child speak and swallow. However, a speaking valve may not be an option for all tracheostomies.	41
Sputum Sample	A small amount of your child’s trach secretions are collected using a device called a sputum trap and are sent to the lab to test for infection.	65
Sputum Trap	A device used to collect a sputum sample that will be sent to the lab to test for infection.	65
Stay Sutures	Two surgical stitches (long sutures) that extend from the new tracheostomy and are taped down to the chest after surgery. They are to be used if the new tracheostomy was accidentally decannulated before the first trach change.	10
Sterile Distilled Water	The water used to care for your child’s trach. This water is sterile (free of all germs) to help prevent infection.	78
Stoma	The hole made into your child’s trachea that is kept open with the trach tube. This hole was created by the surgeon and requires special care and cleaning to make sure the skin does not become irritated or infected.	42
Suction Catheter	A long thin plastic tube that is threaded down your child’s trach tube to suction the airway and remove any secretions or mucous from the tube.	54
Suctioning	The procedure where a suction catheter is passed down the trach tube and secretions and mucous are removed by suction.	54

T		Page
Tip Suctioning	A suction technique where a suction catheter is used to suction the hub of the trach tube when you can see secretions at the end of the trach.	56
Trachea	The windpipe is a passage between the larynx and the lower airways and lungs. The trach tube is inserted into the trachea to support your child's airway.	18
Tracheostomy	The small surgical opening through the skin and into the trachea (or windpipe). A child with a tracheostomy will breathe in and out through the tracheostomy tube.	5
Trach Ties	Velcro or cotton ties that are used to hold the trach tube to the neck so it will not fall out. They are attached to both sides of the trach and wrap around the back of the child's neck.	98
Tracheostomy Tube (Trach tube)	The plastic tube that fits into the stoma and the airway to keep the stoma open and support the airway. This is often referred to as a trach tube in this book.	10
Trach Tube Change	The process of removing the old trach tube from the trachea and inserting a new one.	104
TruSat Home Oximeter	A brand of home oximeter that will measure your child's oxygen saturations at home.	123
U		Page
Uncuffed Trach Tube	A trach tube that does NOT have a cuff or balloon.	40
V		Page
Vagal Response	A reflex that can be triggered when you suction your child. When this response is triggered your child's heart rate and blood pressure will go down.	57
Y		Page
Yankauer	A hard plastic suction device that will help you suction your child's mouth and remove secretions.	54

My health care provider record of learning

MODULE 1: Understanding the need for your child's trach			
Upon finishing this module, you have demonstrated skill in:	Date	Caregiver Initials	RRT Initials
<input type="checkbox"/> Explaining how the respiratory system works			
<input type="checkbox"/> Describing how the trach helps your child breathe			
<input type="checkbox"/> Taking steps to prevent infections at home			
<input type="checkbox"/> Describing the signs of a respiratory infection			

MODULE 2: Understanding the parts of a trach and their care			
Upon finishing this module, you have demonstrated skill in:	Date	Caregiver Initials	RRT Initials
<input type="checkbox"/> Identifying the parts of a trach tube and how they work			
<input type="checkbox"/> Identifying the brand of trach that your child uses			
<input type="checkbox"/> Identifying the size of trach that your child needs			
<input type="checkbox"/> Caring for your child's stoma			
<input type="checkbox"/> Caring for the inner cannula of your child's trach (if applicable)			

MODULE 3: Understanding how to suction your child's trach			
Upon finishing this module, you have demonstrated skill in:	Date	Caregiver Initials	RRT Initials
<input type="checkbox"/> Explaining what suctioning is and why it is important.			
<input type="checkbox"/> Describing when to suction your child's trach.			
<input type="checkbox"/> Suctioning your child's trach			
<input type="checkbox"/> Describing the parts of suction equipment and how they cleaned and maintained.			
<input type="checkbox"/> Explaining what is an emergency back-up syringe			
<input type="checkbox"/> Describing how to collect a sputum sample			

MODULE 4: Understanding humidification and speaking valves			
Upon finishing this module, you have demonstrated skill in:	Date	Caregiver Initials	RRT Initials
<input type="checkbox"/> Explaining what humidification is and why it is important			
<input type="checkbox"/> Identifying the parts of home humidification equipment			
<input type="checkbox"/> Using humidification equipment			
<input type="checkbox"/> Making sterile distilled water			
<input type="checkbox"/> Explaining what a speaking valve is and how it works(if applicable)			
<input type="checkbox"/> Helping your child use a speaking valve			

MODULE 5: Preparing your Go-bag, caring for a cuffed trach, changing trach ties and changing the trach			
Upon finishing this module, you have demonstrated skill in:	Date	Caregiver Initials	RRT Initials
<input type="checkbox"/> Explaining what a Go-Bag is and the importance of each item			
<input type="checkbox"/> Checking your Go-Bag to make sure you have all the equipment needed for trach care and emergencies			
<input type="checkbox"/> Describing why you must have the Go-Bag with your child at all times			
<input type="checkbox"/> Demonstrating how and when to change your child's trach ties			
<input type="checkbox"/> Inflating and deflating a cuffed trach (if applicable)			
<input type="checkbox"/> Demonstrating how and when to change your child's trach			
<input type="checkbox"/> Describing how to manage problems when changing a trach			

MODULE 6: Understanding oxygen saturations, oxygen delivery and medications			
Upon finishing this module, you have demonstrated skill in:	Date	Caregiver Initials	RRT Initials
<input type="checkbox"/> Recognizing when your child is having difficulty breathing			
<input type="checkbox"/> Explaining what oximetry is and how to monitor your child's oxygen saturations levels at home			
<input type="checkbox"/> Using oxygen in your home safely			
<input type="checkbox"/> Demonstrating how to use your home oxygen equipment			
<input type="checkbox"/> Demonstrating how to give your child medication using a puffer (metered dose inhaler)			
<input type="checkbox"/> Demonstrating how to use a nebulizer to give your child a medication			

MODULE 7: Daily care and activities for your child with a trach			
Upon finishing this module, you have demonstrated skill in:	Date	Caregiver Initials	RRT Initials
<input type="checkbox"/> Explaining how the trach may affect your child's communication.			
<input type="checkbox"/> Describing how to help your child bath or shower safely.			
<input type="checkbox"/> Describing how the trach may affect your child's eating.			
<input type="checkbox"/> Demonstrate what to do if your child vomits.			
<input type="checkbox"/> Taking safety measures to help your child play safely.			
<input type="checkbox"/> Describing how you can organize and schedule your child's care.			
<input type="checkbox"/> Identifying how to care for yourself as a caregiver at home			

MODULE 8: Getting ready to leave the hospital and setting goals for the future

Upon finishing this module, you have demonstrated skill in:	Date	Caregiver Initials	RRT Initials
<input type="checkbox"/> Explaining how you can prepare for discharge.			
<input type="checkbox"/> Describing how to get your home ready for your child.			
<input type="checkbox"/> Describing the steps towards discharge.			
<input type="checkbox"/> Describing what funding is available and who can help you apply.			
<input type="checkbox"/> Explaining who will provide your home equipment and visit your home.			
<input type="checkbox"/> Setting goals for the future.			
<input type="checkbox"/> Taking safety measures when planning to travel with your child.			
<input type="checkbox"/> Describing what a planned decannulation is and how it happens.			

MODULE 9: Understanding how to manage emergencies

Upon finishing this module, you have demonstrated skill in:	Date	Caregiver Initials	RRT Initials
<input type="checkbox"/> Explaining how to manage mucous plugs			
<input type="checkbox"/> Demonstrating how to prevent accidental decannulation			
<input type="checkbox"/> Demonstrating how to manage accidental deccanulation			
<input type="checkbox"/> Explaining how to prevent bleeding			
<input type="checkbox"/> Demonstrating how to manage equipment failure			

We welcome your feedback!

At McMaster Children's Hospital, we welcome your feedback. Hearing from patients and families is the best way to improve our care and services.

If you have suggestions for improving this booklet or tracheostomy teaching please speak with your health care provider.



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PD 9973 – 112018
dpc/pted/lrgbk/CaringForYourChildsTracheostomyTube.docx
dt/November 8, 2018