RCH@Home Manual: Basic Life Support for Children with a Tracheostomy

This Manual is written to follow the 2016 Australian Resuscitation Council guidelines (www.resus.org.au) and the RCH Clinical Practice Guidelines

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1. **Basic life support**

Basic life support is where a person or people provide rescue efforts to keep another person alive until medical officers can take over. The nurse will teach it to you (the support worker) using the D.R.S.A.B.C method.

2. **D.R.S.A.B.C**

2.1 **Danger**

Check the area and make sure there is no danger to you, the child or others. If it is safe to do so, remove the danger or remove yourself and the child from danger.

2.2 **Response**

Check for a normal response by touching and talking to the child. Never shake a baby or child.

**Touch:**
For a baby under 1 year: firmly squeeze their earlobe
For a child over a year firmly squeeze their shoulder (trapezius) muscle

**Talk:**
Call the child’s name, give them a simple command such as “open your eyes”. Clap your hands loudly.

If the child is responding normally
1. Check Airway, breathing, circulation
2. Turn the child onto their side (recovery position)

If they do not respond normally:
Place them on their back on the ground, or in their bed with a backing board/hard surface, under their back.

2.3 **Send for help**

Ring 000 or ask another adult to do so. Keep the 000 operator on loudspeaker to assist you.

2.4 **Airway**

- Tilt the child’s head back and look in the tracheostomy
- Suction the tracheostomy. If the catheter passes and suctions easily continue to breathing (section 2.5)
- If there are thick secretions or you have difficulty passing suction catheter instill 0.5ml saline and repeat suction
- If you cannot pass the suction catheter normally into the tracheostomy it is most likely blocked. Complete an emergency tube change. (section 10 Tracheostomy manual)

Quickly check the mouth and nose are clear. If it is safe to do so, remove any foreign body e.g. food, either by suction (if available) or by turning the child on their side and letting anything drain out.

2.5 **Breathing**

Opening the airway and clearing the airway (suctioning or changing tracheostomy) may help the child to breathe again. After opening the airway, check if the child is breathing normally.
To check if the child is breathing normally:

- Look for the rise and fall of the chest
- Listen for breath sounds
- Feel for air coming out of their tracheostomy

If the child is not breathing normally and is unresponsive give two breaths into the tracheostomy tube using the resuscitation bag or one way valve. Watch to see that the chest rises and falls (see section 3 for a full explanation of breathing techniques)

- If the chest does not rise and fall and you have not already done this: do an emergency tracheostomy change – see Section 10 in Looking after a child with a Tracheostomy Core Manual.
- If the chest does not rise and fall and you have done an emergency tube change move onto compressions.

If the child remains unresponsive and not breathing normally, start compressions.

If the child is breathing normally place them in the recovery position and continue to watch them closely. If they stop breathing normally return to DRSABC.

### 2.6 Compressions

- **30** compressions followed by **2** breaths (see section 4 for description on compressions)
- Keep on doing compressions and breaths until the child is responsive and breathing normally or the ambulance arrives and the ambulance officers take over

### 2.7 Defibrillate

If an AED (automatic external defibrillator) is available for the child you care for follow the instructions for use as supplied by the machine manufacturer (not trained by RCH).
3. Rescue breathing Techniques

3.1 Breathing through the one way valve

- Open the airway by placing the child on their back. Then place a rolled towel (or similar) under shoulders for better access to tracheostomy.
- Attach the one-way valve to the tracheostomy (the valve only fits one way)
- The end with the lip is the end you give breaths into
- Place your mouth on the one way valve and blow gently into the valve, watching to see that the child’s chest rises. Then remove your mouth from the valve so that the child’s chest can fall (exhale). You don’t have to take the one way valve off for the child to breathe out

If the child’s chest does not rise:

- Cover the child’s mouth and nose with your hand to stop air coming out
- Suction the tracheostomy (remove the one way valve to suction)
- Complete emergency tube change if you haven’t already done this
- Continue onto chest compressions

If the child vomits and the one way valve gets vomit on/in it

- Remove the one-way valve
- Clear the child’s airway by suctioning the tracheostomy and mouth (as needed)
- Shake the valve to remove vomit
- Blow through the one-way valve or rinse with water to clear it
- Continue mouth to one way valve rescue breathing

The one-way valve is single use only. Throw it out after you have used it for emergency rescue breathing when a spare is available.

Image2 Example of rescue breathing using a one way valve
3.2 Rescue breathing using the resuscitation bag

- For infants under or up to 20 kilograms (4-6 years) use a 500ml (medium) bag. Children over 20 kilograms (4-6 years) use a 2 litre (large) bag.
- If oxygen cylinder with high flow meter is available attach it to the resuscitation bag and turn on the oxygen to 15 litres.
- Open the child’s airway using head tilt and rolled towel (or similar) under shoulders if easily available.
- Attach bag to the tracheostomy.
- If air can escape through the child’s mouth and nose, cover them with one hand.
- Squeeze the bag and then release the bag.
- While squeezing the bag watch to see if the child’s chest rises.

If the child’s chest does not rise:

- Check that you are squeezing the bag hard enough.
- Check to make sure the air isn’t escaping out the mouth or nose.
- Check the bag is connected properly to the tracheostomy.
- Suction if necessary.
- Complete emergency tube change if you haven’t already done this.

If you have to do compressions and rescue breathing on your own, you may need to remove the resuscitation bag from the tracheostomy while doing compressions to stop the weight of the bag pulling out the tracheostomy.
3.3 Giving breaths when unable to re-insert Tracheostomy after an emergency change

If the Child’s tracheostomy has fallen out and you are unable to insert a new tracheostomy following all of the methods outlined in section 10.1 of the Tracheostomy training manual you will need to administer breaths in the following way:

1. Give rescue breaths via upper airway (nose and mouth), you may need to block or tape over the stoma if you feel air escaping
2. If you are unable to give breaths via the upper airway, as a last resort give the child breaths by placing the flat face shield over the stoma and then giving mouth to stoma breaths

3.4 Positioning for breaths via the upper airway

<table>
<thead>
<tr>
<th>Age/weight of Child</th>
<th>Required head position</th>
<th>Example picture</th>
</tr>
</thead>
</table>
| Infant (birth to 1 year) | Neutral position – straight/no head tilt  
Place the child flat on their back.  
Start in neutral position putting one hand on the forehead, two fingers under the chin to maintain position. | ![Example Picture](image) |
| Young Child 1-8 years (or under 25 kg) | Sniffing position – slight head tilt  
Place the child flat on their back  
Start in neutral position  
Move the head into a sniffing position by putting one hand on the forehead, two fingers under the chin (on the bone, not the soft tissue) and lifting.  
This is known as a ‘head tilt, chin lift’ movement. | ![Example Picture](image) |
Older child/adult
8-14 years (or over 25 kg)

Hyperextension – full head tilt
Place the child flat on their back
Start in neutral position
Move the head into a sniffing position by putting one hand on the forehead, two fingers under the chin (on the bone, not the soft tissue) and lifting. This is known as a ‘head tilt, chin lift’ movement.

All ages

Jaw thrust – use in the event of a suspected spinal injury.
Grasp the angle of the lower jaw and lift with both hands one on each side moving the jaw forward.
If lips are closed, open the lower lip with your thumb.

4. Cardiac compressions

Cardiac compressions are when the rescuer (person performing cardiac compressions) uses a push and release action to put to help make the heart beat (contract) which helps to move blood around the body.

- **30** compressions followed by **2** breaths
- Keep on doing compressions and breaths until the child is responsive and breathing normally or the ambulance arrives and the ambulance officers take over.

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4.1 How to do cardiac compressions

1. Place the child on their back on a hard surface, such as the floor, or in bed with a backboard or hardboard such as a chopping board behind their upper middle back.

2. Place fingers or hands on the centre of the chest, lower half (see table and pictures below for the right technique).

3. Keep your elbows straight, push down on the chest about one third of the depth of the chest and then release (up and down action). Use smooth rhythmical compressions, keeping your hands on the child at all times.

4. Pace your compressions at a rate of 120 per minute (two compressions every second).

5. Give 30 compressions followed by two breaths
   - You must stop the compressions to give the two breaths

6. As soon as you have given the two breaths restart the compressions

7. Continue the compressions and breaths until the child becomes responsive and is breathing normally or an ambulance officer tells you to stop.

If the child becomes responsive and is breathing normally stop compressions and breaths. Place the child in the recovery position and continue to watch them closely. If they stop breathing normally and become unresponsive again then restart BLS.

<table>
<thead>
<tr>
<th>Age/weight of Child</th>
<th>Hand position for compressions</th>
<th>Example picture of hand position for compressions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infant</strong> (birth to 1 year)</td>
<td>Two fingers or two thumbs Centre of chest Lower half of sternum (breastbone)</td>
<td><img src="image" alt="Example picture of hand position for compressions" /></td>
</tr>
</tbody>
</table>
### 5. Management of a Blocked Tracheostomy tube

#### 5.1 Partial airway obstruction and child is responsive

This means that the child’s airway is partly blocked. The child is still breathing, may be coughing, crying and in distress. Food, toys, vomit and secretions can block a tracheostomy.

**Signs of a partial blockage:**

- having difficulties breathing, or struggling to get their breath,
- breathing faster or harder
- the child may be restless
- the voice or noise from the tracheostomy may sound louder or whistle
- Change in colour (blue, pale, grey)
- If monitored they may have a drop in oxygen levels or changes to the heart rate

| Young Child 1-8 years (or under 25 kg) | Heel of one or two hands  
| Centre of chest  
| Lower half of sternum (breastbone) |
|---|---|
| Older child/ adult 8-14 years (or over 25 kg) | Two hands, one on top of the other  
| Centre of chest  
| Lower half of sternum (breastbone) |
5.2 Managing a partial airway obstruction

- Reassure the child and suction them
- Continue to watch the child and suction tracheostomy as needed using the suction, saline (0.5ml), suction technique as required
- If the child gets worse call an ambulance 000 and follow the steps for a severe airway obstruction

5.3 Severe airway obstruction child is responsive

This means that the child’s airway is so blocked that they can’t clear it on their own or it isn’t cleared with usual suctioning. If the blockage isn’t removed the child will become unconscious and will stop breathing.

5.4 Signs of a complete blockage:

- Trying to breathe but no air moving in or out of tracheostomy
- Breathing faster or harder
- The child may be restless
- Child may be agitated
- Change in colour (blue, pale, grey)
- If monitored they may have a drop in oxygen levels or changes to the heart rate
- Unable to pass suction catheter into the tracheostomy tube

5.5 Emergency care of a blocked single cannula tracheostomy

Procedure:

Proceed to the next step only if the problem is not yet fixed

1. Perform hand hygiene
2. Suction the tracheostomy
3. Instil saline 0.5ml into the tracheostomy count to 10 and suction again
4. Insert the suction catheter 0.5cms further than the recommended suction length to try and remove any mucous plug at the base of the tracheostomy tube
5. Perform an emergency tracheostomy change (refer to Emergency tracheostomy change section 10 in the Tracheostomy Manual)
6. If this does not relieve the obstruction call an Ambulance “000”

NB. Perform basic life support if child becomes unresponsive

5.6 Emergency care of a blocked inner and outer cannula tracheostomy

Procedure:

Proceed to the next step only if the problem is not yet fixed

1. Perform hand hygiene
2. Remove the inner cannula
3. Suction the outer cannula
4. Instil saline 0.5ml into the outer cannula count to 10 and suction again
5. Insert catheter 0.5cms further than the recommended suction length to remove any mucous plug at the base of the tracheostomy tube
6. If this does not relieve the obstruction call an Ambulance "000"

NB. Perform basic life support if required at any stage

5.7 Child becomes unconscious and is not breathing

- Call an ambulance 000 if you have not already done so
- Complete an emergency tracheostomy change if the tracheostomy is blocked and you haven't already done this
- Start rescue breathing and cardiac compressions (BLS)
- Continue BLS until the ambulance arrives or the child becomes responsive and starts breathing normally

6. Calling an ambulance

6.1 Making the call

- Stay calm
- Dial 000 ask for an ambulance
- Or if you have a speech or hearing disability dial 106 – National Relay Service
- Be prepared to answer the following questions:
  - Where is the location of the emergency?
  - What is the telephone number you are calling from?
  - What is the problem? (What exactly happened?)
  - Who is hurt and how many?
  - How old is the child?
  - Is the child conscious?
  - Is the child breathing?

Do not hang up. The phone operator will give you instructions; you may be asked further questions.

6.2 To assist the ambulance officers

- Answer calmly and accurately
- Tell the phone operator that the child has a tracheostomy
- Identify the property clearly and give the nearest intersections or street names
- If possible, have someone wait outside the location to direct ambulance officers to the emergency
- Have any of the child’s medications available. Find out the child’s approximate weight from parent/carer and if they have any allergies
- Put any dogs away

6.3 If the child is taken to hospital

- Once the ambulance arrives, the support worker is no longer responsible for the care of the child as this passes to the ambulance officers
- If a child’s parents are not present, support workers are required to stay with the child only until the ambulance leaves to take the child to hospital. Support workers do not travel in the ambulance.