



AUSTRALIAN RESUSCITATION COUNCIL

GUIDELINE 4

AIRWAY

This guideline is applicable to adults, children and infants.

GENERAL PRINCIPLES

When a victim is unconscious, all muscles are relaxed. If the victim is left lying on the back, the tongue, which is attached to the back of the jaw, falls against the back wall of the throat and blocks air from entering the lungs. Other soft tissues of the airway may worsen this obstruction. The mouth falls open but this tends to block, rather than open, the airway.

The obstruction to the airway by these soft tissues may be overcome by Backward Head Tilt together with Chin Lift.

The unconscious victim is further at risk because of being unable to swallow or cough out foreign material in the airway. This may cause airway obstruction, laryngeal irritation or foreign material may enter the lungs. For this reason, the rescuer should not give an unconscious victim anything by mouth, and should not attempt to induce vomiting.

If foreign material irritates the vocal cords, a protective reflex muscular spasm (laryngeal spasm) prevents the entry of material into the lungs. This may result in partial or complete airway blockage of the entrance to the trachea (windpipe) with the victim often making a “crowing” noise during attempts to breathe. Airway closure due to laryngeal spasm can be complete; then there is no “crowing” because there is no airflow into or out of the victim. That can persist until the victim becomes blue or unconscious from lack of oxygen. When consciousness is lost, spasm usually relaxes

In an unconscious victim, care of the airway takes precedence over any injury, including the possibility of spinal injury (Refer to Guideline 8.18). All unconscious victims should be handled gently with no twisting or bending of the spinal column and especially the neck. If it is necessary, move the head gently to obtain a clear airway. Where possible, an assistant should support the head when an injured victim is being moved, but no time should be wasted in detailed positioning.

The victim should not be routinely rolled onto the side to assess airway and breathing. Assessing the airway of the victim without turning onto the side (i.e. leaving them on the back or in the position in which they have been found) has the advantages of simplified teaching, taking less time to perform and avoids movement.

The exceptions to this would be in submersion injuries or where the airway is obstructed with fluid (vomit or blood). In this instance the victim should be promptly rolled onto the side to clear the airway.

The mouth should be opened and turned slightly downwards to allow any obvious foreign material (e.g. food, vomit, blood and secretions) to drain using gravity. Loose dentures should be removed, but well-fitting ones can be left in place. Visible material can be removed by the rescuer's fingers. Case series reported the finger sweep as effective for relieving foreign body airway obstruction (FBAO) in unconscious adults and children aged >1yr [LOE IV]. Four case reports documented harm to the victim's mouth or biting of the rescuer's finger.^{1,2}

If breathing commences the victim can be left on the side with appropriate head tilt. If not breathing, the victim should be promptly rolled on the back and resuscitation commenced as appropriate.

AIRWAY MANAGEMENT

Airway management is required to provide an open airway when the victim:

- is unconscious;
- has an obstructed airway;
- needs rescue breathing.

The techniques most commonly used are Backward Head Tilt in combination with Chin Lift. [Class A; LOE IV]

BACKWARD HEAD TILT/CHIN LIFT



One hand is placed on the forehead or the top of the head. The other hand is used to provide Chin Lift. The head is tilted backwards (NOT the neck). It is important to avoid excessive force, especially where neck injury is suspected. When the victim is in a lateral position, the head will usually remain in this position when the rescuer's hands are withdrawn.^{3,4}



Chin lift is commonly used in conjunction with Backward Head Tilt. The chin is held up by the rescuer's thumb and fingers in order to open the mouth and pull the tongue and soft tissues away from the back of the throat.

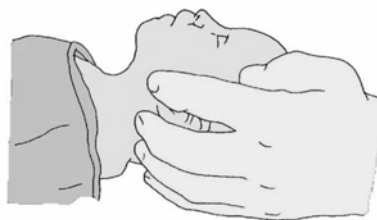
One technique involves placing the thumb over the chin below the lip and supporting the tip of the jaw with the knuckle of the middle finger. The hand is held in a "pistol grip" fashion with the index finger lying along the jaw line. Care is required to prevent the ring finger from squashing the soft tissues of the neck. The jaw is held open slightly and pulled away from the chest.

CHILDREN AND INFANTS

An infant is defined as younger than one year, a child as one to eight years of age.

Maintain an open airway

- Children should be managed as per adults.
- The upper airway in infants is easily obstructed because of the narrowness of the nasal passages, the entrance to the windpipe (vocal cords) and the trachea (windpipe). The trachea is soft and pliable and may be distorted by excessive backward head tilt or jaw thrust. Therefore, in infants the head should be kept neutral and **maximum head tilt should not be used**. The lower jaw should be supported at the point of the chin with the mouth maintained open. There must be no pressure on the soft tissues of the neck. If these manoeuvres do not provide a clear airway, the head may be tilted backwards **very slightly** with a gentle movement. [Class A; LOE Expert Consensus Opinion]



Infant in Neutral Position

(Reproduced Courtesy of European Resuscitation Council)

RECOGNITION OF UPPER AIRWAY OBSTRUCTION

Airway obstruction may be partial or complete and may be present in the conscious or the unconscious victim. Some typical causes of airway obstruction may include, but are not limited to:

- relaxation of the airway muscles due to unconsciousness;
- inhaled foreign body;
- trauma to the airway;
- anaphylactic reaction.

The signs and symptoms of obstruction will depend on the cause and severity of the condition. Airway obstruction may be gradual or sudden in onset and lead to complete obstruction within a few seconds. Consequently the victim should be observed continually.

In the conscious victim who has inhaled a foreign body, for example, there may be extreme anxiety, agitation, gasping sounds, coughing or loss of voice. This may progress to the universal choking sign (clutching the neck with the thumb and fingers).



Airway obstruction will cause the diaphragm muscle to work harder in order to achieve adequate ventilations. The abdomen will continue to move out but there will be loss of the natural rise of the chest (paradoxical movement), and in drawing of the spaces between the ribs and above the collar bones during inspiration.

Partial Obstruction

- breathing is laboured;
- breathing may be noisy;
- some escape of air can be felt from the mouth.

Complete Obstruction

- there may be efforts at breathing;
- there is no sound of breathing;
- there is no escape of air from nose and/or mouth.

Airway obstruction may not be apparent in the non breathing unconscious victim until rescue breathing is attempted.

MANAGEMENT OF FOREIGN BODY AIRWAY OBSTRUCTION **(CHOKING)**

A Foreign Body Airway Obstruction (FBAO) is a life-threatening emergency. Chest thrusts, back blows, or abdominal thrusts are effective for relieving FBAO in conscious adults and children > 1 year of age, although injuries have been reported with the abdominal thrust [LOE IV].¹

Therefore, the Australian Resuscitation Council does not recommend the use of abdominal thrusts in the management of FBAO, and instead recommends that back blows and chest thrusts are used. [Class A; LOE IV]



The Australian Resuscitation Council no longer recommends the use of lateral chest thrusts.

Assess Severity

The simplest way to assess severity of a FBAO is to assess for ineffective or effective cough.

Effective Cough (Mild Airway Obstruction)

The victim with an effective cough should be given reassurance and encouragement to keep coughing to expel the foreign material. If the obstruction is not relieved the rescuer should call an ambulance (000).

Ineffective Cough (Severe Airway Obstruction)

Conscious Victim

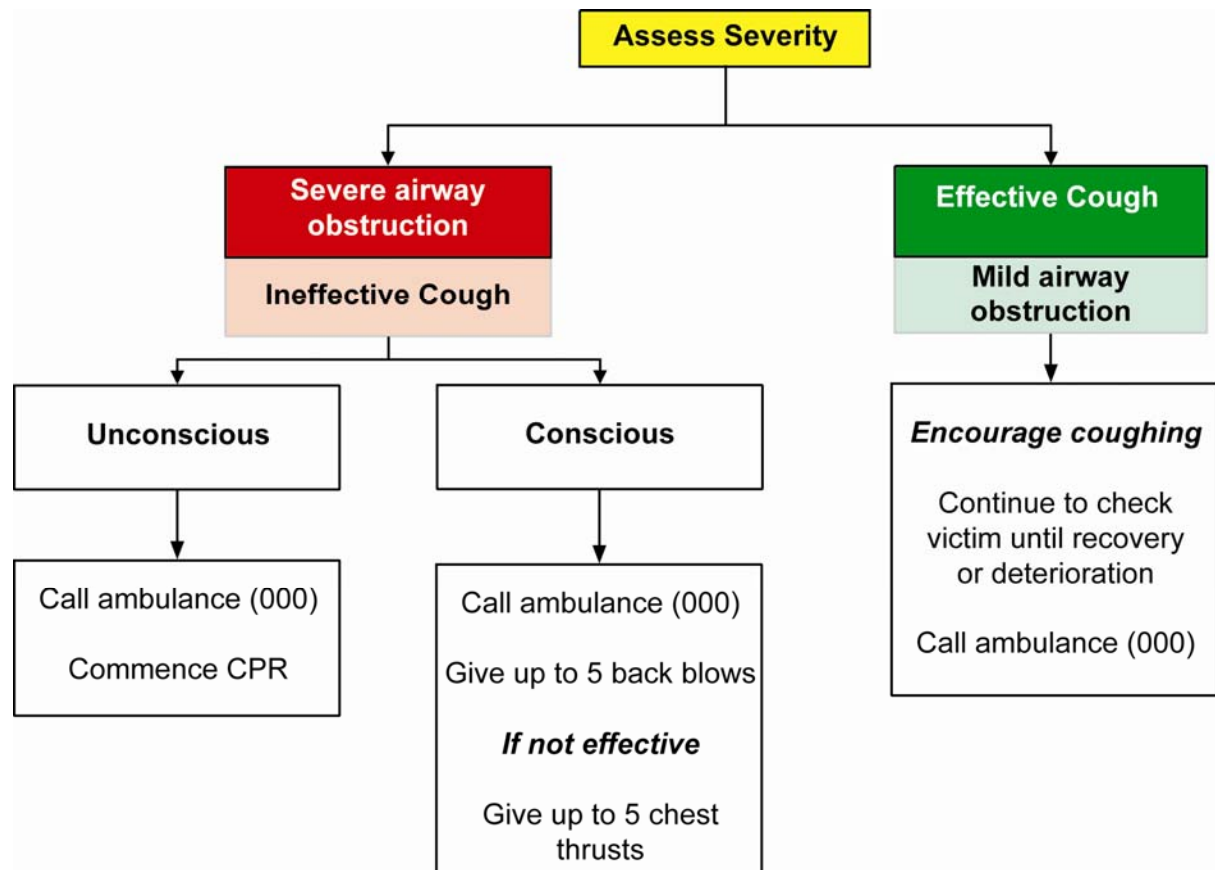
If the victim is conscious call an ambulance (000) and perform up to five sharp back blows with the heel of one hand in the middle of the back between the shoulder blades. Check to see if each back blow has relieved the airway obstruction. The aim is to relieve the obstruction with each blow rather than to give all five blows. An infant may be placed in a head downwards position prior to delivering back blows, i.e. across the rescuer's lap [Class A; LOE IV].^{1,2}

If back blows are unsuccessful the rescuer should perform five chest thrusts. Check to see if each chest thrust has relieved the airway obstruction. The aim is to relieve the obstruction with each chest thrust rather than to give all five chest thrusts. To perform chest thrusts identify the same compression point as for CPR and give five chest thrusts. These are similar to chest compressions but sharper and delivered at a slower rate. The infant should be placed in a head downwards supine position across the rescuer's thigh. Children and adults may be treated in the sitting or standing position [Class A; LOE IV].^{1,2} If the obstruction is still not relieved, continue alternating five back blows with five chest thrusts.

Unconscious Victim

The finger sweep can be used in the unconscious patient with an obstructed airway if solid material is visible in the airway. ^{1,2} [Class A; LOE IV] Call an ambulance (000) and commence CPR.

MANAGEMENT OF FOREIGN BODY AIRWAY OBSTRUCTION (CHOKING)



REFERENCES

1. Consensus on Resuscitation Science & Treatment Recommendations. Part 2: Adult Basic Life Support. Resuscitation 2005; 67: 187-201.
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