



AUSTRALIAN RESUSCITATION COUNCIL

GUIDELINE 5

BREATHING

This guideline is applicable to adults, children and infants.

CAUSES OF INEFFECTIVE BREATHING OF ACUTE ONSET

Breathing may be absent or ineffective as a result of:

- direct depression of/or damage to the breathing control centre of the brain;
- upper airway obstruction;
- paralysis or impairment of the nerves and/or muscles of breathing;
- problems affecting the lungs;
- immersion.

ASSESSMENT OF BREATHING

After an unconscious victim's airway is cleared, the next step is to check whether or not the victim is breathing (more than the occasional gasp). The rescuer should:

- **LOOK** and **FEEL** for movement of the upper abdomen or lower chest, and;
- **LISTEN** and **FEEL** for the escape of air from nose and mouth.

Movement of the lower chest and upper abdomen does not necessarily mean the victim has a clear airway. Impairment or complete absence of breathing may develop before consciousness is lost by the victim. [Class A; Expert Consensus Opinion]

RESCUE BREATHING

If the unconscious victim is not breathing after the airway has been opened and cleared, the rescuer must immediately commence Rescue Breathing. Give two initial breaths allowing about one second per inspiration, and then check for signs of life (i.e. unconscious, unresponsive, not moving and no normal breathing). If no signs of life commence chest compressions. [Class A; LOE III-2]

MOUTH TO MOUTH RESCUE BREATHING

TILT

Kneel beside the victim's head. Maintain an open airway (refer to Guideline 4).

BLOW

Take a breath, open your mouth as widely as possible and place it over the victim's slightly open mouth. Whilst maintaining an open airway pinch the nostrils (or seal nostrils with rescuer's cheek) and blow to inflate the victim's lungs. Because the hand supporting the head comes forward some head tilt may be lost and the airway may be obstructed. Pulling upwards with the hand on the chin helps to reduce this problem.

LOOK, LISTEN AND FEEL

Look for rise of the victim's chest during each inflation. If the chest does not rise, possible causes are:

- Obstruction in the airway (inadequate head tilt, chin lift, tongue or foreign material);
- Insufficient air being blown into the lungs;
- Inadequate air seal around mouth and or nose.

If the chest does not rise, ensure correct head tilt, adequate air seal and ventilation. Following inflation of the lungs, lift your mouth from the victim's mouth turn your head towards the victim's chest and listen and feel for air being exhaled from the mouth and nose.

MOUTH TO NOSE RESCUE BREATHING

The mouth to nose method may be used where the rescuer chooses, the victim's jaws' are tightly clenched, or when resuscitating infants and small children.

The technique for mouth to nose is the same as for mouth to mouth except for sealing the airway. Close the victim's mouth with the hand supporting the jaw and push the lips together with the thumb. Take a breath and place your widely opened mouth over the victim's nose (or mouth and nose in infants if possible) and blow to inflate the victim's lungs. Lift the mouth from the victim's nose and look for the fall of the chest; listen and feel for the escape of air from the nose and mouth.

If the chest does not move, there is an obstruction, an ineffective seal, or insufficient air being blown into the lungs. In mouth to nose resuscitation, a leak may occur if the rescuer's mouth is not open sufficiently, or if the victim's mouth is not sealed adequately. If this problem persists, use mouth to mouth resuscitation. It may be found that blockage of the nose prevents adequate inflation. If this occurs, mouth to mouth resuscitation should be used.^{1,2} [Class A; LOE IV]

MOUTH TO MASK RESCUE BREATHING

Mouth to mask resuscitation is a method of Rescue Breathing which avoids mouth to mouth contact by the use of a resuscitation mask. Rescuers should take appropriate safety precautions when feasible and when resources are available to do so, especially if a victim is known to have a serious infection (e.g. HIV, tuberculosis, Hepatitis B Virus or SARS)¹. [Class A; LOE IV]

Position yourself at the victim's head and use both hands to maintain an open airway and to hold the mask in place. Maintain backward head tilt and chin lift. Place the narrow end of the mask on the bridge of the nose and apply the mask firmly to the face by simultaneously pushing down with the thumb on the mask, elevating the jaw into the mask.

Inflate the lungs by blowing through the mouthpiece of the mask with sufficient volume and force to achieve chest movement. Remove your mouth from the mask to allow exhalation. Turn your head to listen and feel for the escape of air. If the chest does not rise, recheck head tilt, chin lift and mask seal. In difficult circumstances the rescuer may need to be in a slightly different position. Ideally there should be two rescuers for mouth to mask rescue breathing as interruptions to chest compressions should be minimised.

Failure to maintain backward head tilt and chin lift is the most common cause of obstruction during resuscitation.



Mouth to Mask Method

(Reproduced Courtesy of European Resuscitation Council)

MOUTH TO NECK STOMA METHOD

A person with a laryngectomy has had the larynx (voice box) removed and breathes through a hole in the front of their neck (stoma). A stoma will be more obvious when the victim is on the back for Rescue Breathing and the head is put into backward tilt. If a tube is seen in the stoma, always leave it in place to keep the hole open for breathing and resuscitation.

The rescuer should place their mouth over the stoma and perform rescue breathing as described above. If the chest fails to rise, this may be due to a poor seal over the stoma, the victim having a tracheostomy rather than laryngectomy thus allowing air to escape from the mouth and nose or a blocked stoma or tube. If stoma or tube is blocked use back blows, chest thrusts in an attempt to dislodge the obstruction (Refer to Guideline 4). [Class A; LOE Expert Consensus Opinion]

REFERENCES

1. Consensus on Resuscitation Science & Treatment Recommendations. Part 2: Adult Basic Life Support. Resuscitation 2005; 67: 187-201.
2. Consensus on Resuscitation Science & Treatment Recommendations. Part 6: Paediatric Basic and Advanced Life Support. Resuscitation 2005; 67: 271-291.