

INTRODUCTION

The majority of choking events in infants and children occur during play or whilst eating when a carer is usually present.

Events are frequently witnessed, and interventions are usually initiated when the child is conscious.

Foreign body airway obstruction (FBAO) is characterised by the sudden onset of respiratory distress associated with coughing, gagging, or stridor (**Table 1**).

Similar signs and symptoms may also be associated with other causes of airway obstruction such as laryngitis or epiglottitis, which require different management.

Recognition of FBAO

When a foreign body enters the airway the child reacts immediately by coughing in an attempt to expel it.

A spontaneous cough is likely to be more effective and safer than any manoeuvre a rescuer might perform.

- if coughing is absent or ineffective and the object completely obstructs the airway, the child will rapidly become asphyxiated.

Active interventions to relieve FBAO are therefore required only when coughing becomes ineffective, but they then need to be commenced rapidly and confidently.

Suspect FBAO if:

- the onset was very sudden
- there no other signs of illness
- there are clues to alert the rescuer, for example a history of eating or playing with small items immediately prior to the onset of symptoms.

MANAGEMENT

Relief of FBAO

1. Safety

Rescuers should take care not to place themselves in any danger and consider the safest action to manage the choking child.

2. Actions are determined by effectiveness of coughing.

If the child is coughing effectively no external manoeuvre is necessary. Encourage the child to cough and monitor continuously.

If the child's coughing is (or is becoming) ineffective summon help if appropriate and determine the child's conscious level.

Conscious child with FBAO:

If the child is still conscious but has absent or ineffective coughing, give back blows. If back blows do not relieve the FBAO, give chest thrusts to infants or abdominal thrusts to children. These manoeuvres increase intrathoracic pressure and may dislodge the foreign body.

Unconscious child with FBAO:

If the child with FBAO is, or becomes, unconscious, place him on a firm, flat surface. Proceed as follows:

a. Open the Airway:

- open the mouth and look for any obvious object
- if one is seen, make an attempt to remove it with a single finger sweep.

DO NOT attempt blind or repeated finger sweeps - these can impact the object more deeply into the pharynx and cause injury.

Table 1 - General Signs of Foreign Body Airway Obstruction

GENERAL SIGNS OF FOREIGN BODY AIRWAY OBSTRUCTION	
Witnessed episode	
Coughing or choking	
Sudden onset	
Recent history of playing with or eating small objects	
Ineffective coughing <ul style="list-style-type: none"> ● Unable to vocalise ● Quiet or silent cough ● Unable to breathe ● Cyanosis ● Decreasing level of consciousness 	Effective coughing <ul style="list-style-type: none"> ● Crying or verbal response to questions ● Loud cough ● Able to breathe before coughing ● Fully responsive

b. Attempt ventilation:

- open the airway and make 5 attempts to ventilate the lungs
- assess the effectiveness of each ventilation: if it does not make the chest rise, reposition the head before making the next attempt.

c. Perform chest compression and CPR:

- if there is no response to 5 attempts at ventilation (moving, coughing, spontaneous breaths) proceed to chest compressions without further assessment of the circulation
- follow the sequence for single rescuer CPR for approximately 1 minute
- when the airway is opened for attempted ventilation, look to see if the foreign body can be seen in the mouth
- if an object is seen, attempt to remove it with a single finger sweep
- if it appears that the obstruction has been relieved, open and check the airway as above. Perform ventilation if the child is not breathing
- if the child regains consciousness and exhibits spontaneous effective breathing, place him in a safe side-lying (recovery) position and monitor breathing and conscious level, transfer to hospital.

NOTES ON TECHNIQUES

1. Back blows

In an infant:

- support the infant in a head-downwards, prone position, to enable gravity to assist removal of the foreign body
- a seated or kneeling rescuer should be able to support the infant safely across his lap
- support the infant's head by placing the thumb of one hand, at the angle of the lower jaw, and one or two fingers from the same hand at the same point on the other side of the jaw
- do not compress the soft tissues under the infant's jaw, as this will exacerbate the airway obstruction
- deliver up to 5 sharp back blows with the heel of one hand in the middle of the back between the shoulder blades
- the aim is to relieve the obstruction with each blow rather than to give all 5.

In a child over 1 year of age:

- back blows are more effective if the child is positioned head down
- a small child may be placed across the rescuer's lap as with an infant
- if this is not possible, support the child in a forward-leaning position and deliver the back blows from behind.

3. Chest thrusts

If back blows fail to dislodge the object, and the child is still conscious, use chest thrusts for infants or abdominal thrusts to children. **Abdominal thrusts (Heimlich manoeuvre) must not be used in infants.**

Chest thrusts for infants:

- turn the infant into a head-downwards supine position. This is achieved safely by placing the free arm along the infant's back and encircling the occiput with the hand
- support the infant down your arm, which is placed down (or across) your thigh
- identify the landmark for chest compression (lower sternum approximately a finger's breadth above the xiphisternum)
- deliver 5 chest thrusts. These are similar to external chest compressions but sharper in nature and delivered at a slower rate.

Abdominal thrusts for children over 1 year:

- stand or kneel behind the child. Place your arms under the child's arms and encircle his torso
- clench your fist and place it between the umbilicus and xiphisternum
- grasp this hand with the other hand and pull sharply inwards and upwards
- repeat up to 5 times
- ensure that pressure is not applied to the xiphoid process or the lower rib cage as this may result in abdominal trauma.

4. Re-assessment

Following the chest or abdominal thrusts, re-assess the child:

- if the object has not been expelled and the victim is still conscious, continue the sequence of back blows and chest (for infant) or abdominal (for children) thrusts

- do not leave the child at this stage. Arrange transfer to hospital
- if the object is expelled successfully, assess the child's clinical condition. It is possible that part of the object may remain in the respiratory tract and cause complications
- abdominal thrusts may cause internal injuries and all victims so treated should be assessed further.

Key Points – Child Foreign Body Airway Obstruction

- FBAO is a potentially treatable cause of death, often occurs whilst playing or eating.
- Characterised by sudden onset of respiratory distress.
- If coughing effectively, encourage child to cough.
- If coughing is ineffective give back blows initially, if ineffective give chest thrusts to infants and abdominal thrusts to children.
- Abdominal thrusts can cause serious internal bleeding therefore patients should be assessed in hospital.
- Avoid blind finger sweeps.

BIBLIOGRAPHY

Refer to child basic life support.

METHODOLOGY

The methodology describing the development process of the international cardio-pulmonary resuscitation treatments recommendations on which this guideline is based is fully described in the publications listed below.

Morley PT, Zaritsky A. The evidence evaluation process for the 2005 International Consensus Conference on cardio-pulmonary resuscitation and emergency cardiovascular care science with treatment recommendations. *Resuscitation* 2005;67(2-3):167-170.

Zaritsky A, Morley PT. The Evidence Evaluation Process for the 2005 International Consensus Conference on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations. *Circulation* 2005;112(22_suppl):III-128-130.

Child Foreign Body Airway Obstruction (FBAO)

APPENDIX 1 - Paediatric Foreign Body Airway Obstruction (FBAO)

Paediatric Guidelines

