

## 2010 Resuscitation Council Changes Paediatric Basic Life Support

The much awaited changes were released on Monday 18<sup>th</sup> October 2010.

The surprising thing is that at first glance there are few major changes to the resuscitation protocol, but upon detailed investigation, there are many subtle changes and in particular the emphasis that must be placed within certain areas of the resuscitation procedure when teaching it.

NB: A lot of what is mentioned within this document is already being taught, but it's the emphasis when you are teaching that's important.

This is link to the Resuscitation Council UK website, where all the changes, including Paediatric BLS, can be read in detail: <http://www.resus.org.uk/pages/GL2010.pdf>

Here is a brief summary of the changes/emphasis that affects you and your teaching.

### **Infant and child BLS sequence**

Rescuers who have been taught adult BLS, and have no specific knowledge of paediatric resuscitation, should use the adult sequence. The following modifications to the adult sequence will, however, make it more suitable for use in children:

- Give 5 initial rescue breaths before starting chest compressions
- If you are on your own, perform CPR for 1 minute before going for help.
- Compress the chest by at least one-third of its depth. Use two fingers for an infant under 1 year; use one or two hands for a child over 1 year as needed to achieve an adequate depth of compression.

### **Compression: Ventilation ratios – healthcare provider and lay person**

Although ventilation remains a very important component of CPR in asphyxial arrest, rescuers who are unable or unwilling to provide this should be encouraged to perform at least compression-only CPR.

A child is far more likely to be harmed if bystanders do nothing at all.

The lay person (First Aider's and Emergency First Aider's in our instance), should use the ratio of 30 chest compressions : 2 rescue breaths.

### **Chest compression quality**

Anthropomorphic and radiographic measurements in children have demonstrated that compression of the chest by one-third the chest depth is feasible and safe.

Data in adults and older children suggest that chest compressions are frequently too shallow, so there has been a subtle, but important, change in the instruction on chest compressions from "approximately one-third" to "at least one-third" of the depth of the chest.

A post-mortem review found that physical damage following CPR in children was very rare. It is reasonable to advise, "**don't be afraid to push too hard**".

Training and feedback devices are being developed for adults but require absolute, rather than relative, dimensions. In order to facilitate the same for children, the measurement data above indicate that the mean dimensions for one-third compression depths for infants and children are 4 and 5 cm respectively.

In order to be consistent with the adult BLS guidelines the advice on compression rate has been amended to at least 100 but not greater than 120 per minute.

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## Paediatric Basic Life Support

### Rescue Breaths

#### Rescue breaths for a child over 1 year:

- Ensure head tilt and chin lift.
- Pinch the soft part of his nose closed with the index finger and thumb of your hand on his forehead.
- Open his mouth a little, but maintain the chin lift.
- Take a breath and place your lips around his mouth, making sure that you have a good seal.
- Blow steadily into his mouth over about 1 - 1.5 seconds sufficient to make the chest rise visibly.
- Maintaining head tilt and chin lift, take your mouth away and watch for his chest to fall as air comes out.
- Take another breath and repeat this sequence four more times. Identify effectiveness by seeing that the child's chest has risen and fallen in a similar fashion to the movement produced by a normal breath.

#### Rescue breaths for an infant:

- Ensure a neutral position of the head (as an infant's head is usually flexed when supine, this may require some extension) and apply chin lift.
  - Take a breath and cover the mouth and nasal apertures of the infant with your mouth, making sure you have a good seal. If the nose and mouth cannot both be covered in the older infant, the rescuer may attempt to seal only the infant's nose or mouth with his mouth (if the nose is used, close the lips to prevent air escape).
  - Blow steadily into the infant's mouth and nose over 1 - 1.5 seconds sufficient to make the chest rise visibly.
  - Maintain head position and chin lift, take your mouth away, and watch for his chest to fall as air comes out.
  - Take another breath and repeat this sequence four more times.
- For both infants and children, if you have difficulty achieving an effective breath, the airway may be obstructed:
- Open the child's mouth and remove any visible obstruction. Do not perform a blind finger sweep.
  - Ensure that there is adequate head tilt and chin lift but also that the neck is not over extended.
  - Make up to 5 attempts to achieve effective breaths. If still unsuccessful, move on to chest compression.

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This is a statement issued by the European Resuscitation Council (UK) regarding Paediatric First Aid training.

### Teaching child resuscitation

#### Who can train parents (or others) child resuscitation and what qualifications should they hold?

There are no statutory legal provisions in the UK relating to the practice of resuscitation, but those who provide training have obligations under common law.

Further details may be found in our publication '*The Legal Status of those who Attempt Resuscitation*' which is also available on our website [www.resus.org.uk](http://www.resus.org.uk).

The Resuscitation Council UK recommend that those who train others in BLS should be appropriately qualified. Provided that they are skilled in teaching and able to demonstrate core competencies the following persons are suggested: doctors, nurses, resuscitation officers, statutory ambulance service instructors, and other individuals such as accredited first aid trainers. This list is not exhaustive. It is important to be aware that many children do not receive resuscitation because potential rescuers fear causing harm. This fear is unfounded; it is far better to use the adult BLS sequence for resuscitation of a child than to do nothing.

For ease of teaching and retention, therefore, laypeople should be taught that the adult sequence may also be used for children who are not responsive and not breathing, although the depth of compression will need to be modified to one third the depth of the child's chest.

This modification of compression depth is logical and does not alter the sequence of adult BLS. Therefore the message can be easily transferred during adult BLS courses.

There are laypeople who are particularly likely to find themselves responsible for attempting resuscitation in infants or children. Examples of such people include parents with young children, nursery carers, first aiders with a duty to respond, and lifeguards.

The following modifications to the adult sequence, which will make the adult sequence even more suitable for use in children, may be taught, as additional training, to these people.

- Give 5 initial rescue breaths before starting chest compressions (adult BLS sequence of actions 5B).
- If you are on your own, perform CPR for approximately 1 min before going for help.
- Compress the chest by one third of its depth: use two fingers for an infant under 1 year; use one or two hands for a child over 1 year as needed to achieve an adequate depth of compression.

This modified sequence should not be taught as part of an initial layperson, community, or first aid course, but should be considered additional training for those who are particularly likely to attempt resuscitation of a child.

Very rarely, parents or carers of children with a specific risk of requiring resuscitation may receive detailed training as for health professionals (see 3. below)

The Resuscitation Council (UK), therefore, recommends three levels of promoting and training child resuscitation:

#### 1. During adult BLS courses

- the following statement may be given: "children can be resuscitated using the adult sequence, with the single modification of chest compression depth".

#### 2. Special courses teaching child resuscitation to specific target groups who work with children or are likely to have to respond to child emergencies:

- modification of adult BLS techniques: 5 initial breaths; 1 minute of CPR before going for help; chest compression depth and technique.
- practice on child / infant CPR manikins.

#### 3. Special courses for healthcare professionals, with a duty to respond to paediatric emergencies, working in teams, who are also in a position to receive enhanced training. (See the dedicated chapter in Guidelines 2010)

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### **Choking**

There are no changes to this procedure for paediatric teaching

### **This is the link specific to Paediatric BLS**

<http://www.resus.org.uk/pages/pbls.pdf>

### **As a reminder here is the link for all the changes:**

<http://www.resus.org.uk/pages/GL2010.pdf>

Please do not hesitate to contact the office if you have any questions;

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Full details can also be obtained from the download area of Nucoplus by following this link:

<http://www.nucoplus.com/FirstAidFAQ-q.aspx?category=64>

(Please note that you will have to log-in as normal and then you will be directed to the specific area)