

IOWA HEART ASSOCIATION

AMERICAN HEART ASSOCIATION
CARDIOPULMONARY RESUSCITATION AND EMERGENCY CARDIAC CARE
RATIONALE FOR ONE AND TWO RESCUER CPR

ELAPSED TIME (Seconds) Min. Max.		ACTIVITY AND TIME (Seconds)	CRITICAL PERFORMANCE	RATIONALE
4	10	Establish unresponsiveness and call out for help. Allow 4 - 10 sec. if face down and turning is required.	Shake shoulder, shout - "Are you OK?" Call out - "Help!" Turn if necessary.	Frequently victim will be face down. Effective closed chest heart compression can only be provided with victim flat on back on hard surface.
			Adequate time	Accurate diagnosis is important. 4 to 10 seconds gives time to do that and to review mentally the sequence of CPR.
7	15	Open airway. Establish breathlessness. (Look, Listen, and Feel) (3 - 5 sec.)	Kneels properly	Airway must be opened to establish breathlessness. Many victims may be making respiratory efforts that are ineffective because of obstruction.
			Head tilt with one hand on forehead and neck lift or chin lift with other hand.	
			Ear over mouth, observe chest.	
10	20	Four ventilations. (3 - 5 sec.)	Ventilate properly 4 times and observe chest rise.	
15	30	Establish pulse and simulate activation of EMS system (5 - 10 sec.)	Fingers palpate for carotid pulse on near side (other hand on forehead maintains head tilt)	This activity should take 5 to 10 seconds, because not only does it take time to find the right place, but the pulse may be very slow or very weak and rapid.
			Know local EMS number	
			Adequate time	
69	96	Four cycles of 15 compressions 2 ventilations (54 - 66 sec.)	Proper body position	Precision in hand placement is essential to avoid serious injury.
			Landmark check each time	
			Position of hands	Necessary to establish rhythm Should attempt to accomplish 60 compressions and 8 ventilations per minute
			Vertical compression	
			Says mnemonic	
			Proper rate	
			Proper ratio	
			No bouncing	
72	101	Check for return of pulse and spontaneous breathing. (Pupil check optional) (3 - 5 sec.)	Ventilates properly	Pupil size helps to monitor changes in the patient.
			Check pulse and breathing (Pupil check optional)	

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ELAPSED TIME (Seconds)		ACTIVITY AND TIME (Seconds)	CRITICAL PERFORMANCE	RATIONALE
Min.	Max.			
80	111	Minimum of two cycles of 5 compressions and 1 ventilation (8 - 10 sec.) Switch and repeat until examiner is satisfied.	Changes rate of compression	
			Says mnemonic	Necessary to establish rhythm
			Interposes breath	
			No pause for ventilation	
			Calls for switch	Signal for change must be clear
			Switches	
			Switches back	
			Checks pulse (by ventilator)	
			(Pupil check - optional)	Pupil size helps to monitor changes in the patient
			Technique as above	

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RATIONALE FOR INFANT RESUSCITATION

ELAPSED TIME (Seconds)		ACTIVITY AND TIME (Seconds)	CRITICAL PERFORMANCE	RATIONALE
Min.	Max.			
3	5	Establish unresponsiveness and call out for help (including turning) (3 - 5 sec.)	Shake shoulder, shout - "Are you OK?" Call out - "Help!" Turn if necessary.	Diagnosis must be equally accurate in children and infants. With this emotionally charged situation, time must be taken to establish the diagnosis of cardiac arrest. Horizontal position aids effective circulation.
			Infant horizontal.	
			Adequate time.	
6	10	Open airway. Establish breathlessness. (3 - 5 sec.)	Tip head back. Do not hyperextend.	Hyperextension can collapse trachea.
			Put ear over mouth to feel for breathing.	
9	15	Four ventilations (3 - 5 sec.)	Use small breaths to ventilate	
14	25	Establish pulse and simulate activation of EMS system (5 - 10 sec.)	Fingers palpate for carotid or precordial pulse.	
			Know local EMS number.	
44	55	8 cycles of 5 compressions and 1 ventilation Continue uninterrupted (30 sec.)	Two fingers (mid-sternum) for compressions 80 to 100 compressions per minute	Small children and infants need a more rapid cardiac compression rate (80 to 100 per minute) with breaths interposed every 5 compressions.
				Alternate technique is to encircle chest with hands, using both thumbs to compress.

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RATIONALE FOR OBSTRUCTED AIRWAY

UNCONSCIOUS VICTIM, SUPINE

ELAPSED TIME (Seconds)		ACTIVITY AND TIME (Seconds)	CRITICAL PERFORMANCE	RATIONALE
Min.	Max.			
4	10	Establish unresponsiveness and call out for help. Allow 4 - 10 sec. if face down and turning is required.	Shake shoulder, shout - "Are you OK?" Call out - "Help!" Turn if necessary Adequate time	This initial call for help is to alert bystanders.
7	15	Open airway. Establish breathlessness. (Look, Listen, and Feel) (3 - 5 sec.)	Kneels properly Head tilt with one hand on forehead and neck lift or chin lift with other hand Ear over mouth, observe chest	
10	20	Attempt to ventilate (3 - 5 sec.)	Attempt ventilation. Airway remains obstructed.	Complete airway obstruction by a foreign body is assumed present, but at this point an attempt must be made to get some air into the lungs.
13	25	Reattempt ventilation (3 - 5 sec.)	Reposition head, airway remains obstructed.	
17	31	4 Back Blows (4 - 6 sec.)	Roll victim toward you, using your thigh for support. Give 4 forceful and rapidly delivered blows to back between shoulder blades.	Continually check for success.
22	37	4 Abdominal Thrusts (5 - 6 sec.) <u>OR</u> 4 Chest Thrusts (5 - 6 sec.)	Position yourself with your knees close to victim's hips. Place heel of one hand between lower breastbone and navel and second hand on top. Press into abdomen with quick upward thrusts. Same hand position as that for applying closed chest cardiac compression. Exert quick downward thrusts.	Kneeling at victim's side gives the rescuer greater mobility and access to the airway. Chest thrusts are preferred in the presence of large abdominal girth (advanced pregnancy & obesity). Downward thrusts generate effective airway pressures.
28	45	Check for foreign body using finger. (6 - 8 sec.)	Turn head to side, open mouth with jaw-lift technique and probe deeply into mouth along cheek with hooked finger.	A dislodged foreign body may now be manually accessible if it has not been expelled.
31	50	Attempt to ventilate (3 - 5 sec.)	Reposition head. Airway remains obstructed.	By this time another attempt must be made to get some air into the lungs.
		Verbally indicate repeat of above sequence until effective.	Verbalize alternating the above maneuvers in rapid sequence.	Persistent attempts are rapidly made in sequence in order to relieve the obstruction.

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CONSCIOUS VICTIM, SITTING OR STANDING; COMPLETE AIRWAY OBSTRUCTION

ELAPSED TIME (Seconds) Min. Max.		ACTIVITY AND TIME (Seconds)	CRITICAL PERFORMANCE	RATIONALE
2	3	Rescuer asks: Can you speak?" (Look, Listen and Feel for breathing) (2 - 3 sec.)	Rescuer must identify complete airway obstruction by asking victim if he is able to speak.	
5	8	4 Back Blows (3 - 5 sec.)	Deliver 4 sharp blows rapidly and forcefully to the back between the shoulder blades; support the victim's chest with other hand	Continually check for success.
9	13	4 Abdominal Thrusts (4 - 5 sec.)	Stand behind victim and wrap your arms around his waist. Grasp one fist with your other hand and place thumb side of your fist between breastbone and navel. Press fist into abdomen with quick upward thrusts.	The sequence of back blows and abdominal or chest thrusts may be more effective than either maneuver used alone.
		<u>OR</u> 4 Chest Thrusts (4 - 5 sec.)	Stand behind victim and place your arms under victim's armpits to encircle the chest. Grasp one fist with other hand and place thumb side of fist on breastbone. Press with quick backward thrusts.	Chest thrusts are more easily delivered than are abdominal thrusts when the abdominal girth is large, as in gross obesity or in advanced pregnancy.
		Verbally indicate repeat of above sequence until effective.	Verbalize alternating the above maneuvers in rapid sequence.	Time is of the essence: the two techniques are rapidly repeated alternately until obstruction is relieved or unconsciousness occurs.