

# توانمندسازی اعضای خانواده در مواجهه با بیماران بد حال در منزل

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استادیار بیهوشی، درد و مراقبتهای ویژه

معاون پژوهشی مرکز تحقیقات جراحی مغز اعصاب عملکردی

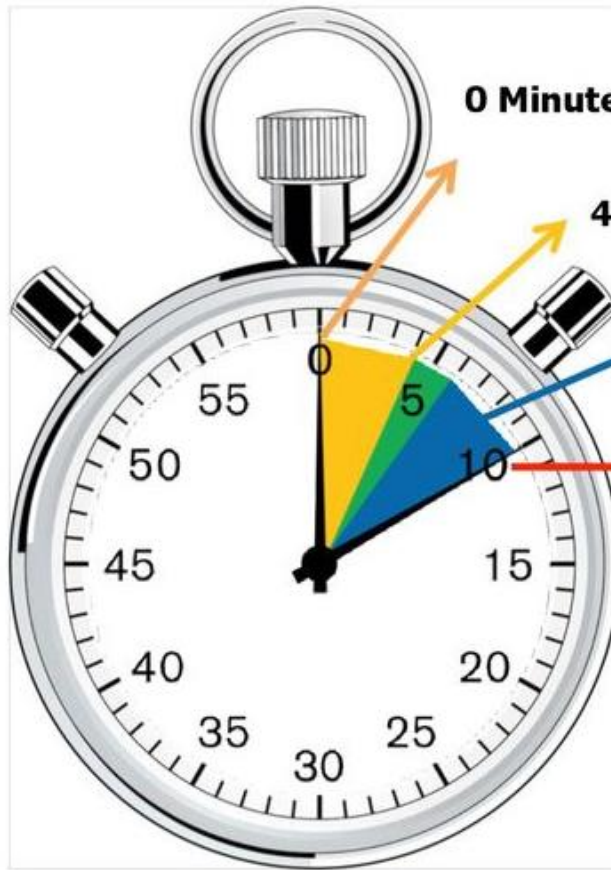


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# مباحث این سخنرانی



- بیمار بد حال کیست؟
- از چه زمانی باید اقدامات درمانی انجام پذیرد؟
- کاهش سطح هوشیاری چیست؟
- تنگی نفس و علایم مشکلات قلبی ریوی حاد
- کووید و افت سطح اکسیژن
- ایست قلبی و احیا پایه قلبی ریوی
- کنترل استرس و مدیریت صحنه



**0 Minutes:** Breathing stops.  
Heart will soon cease beating.

**4 Minutes:** Possible brain damage.

**6-10 Minutes:** Likely brain damage.

**Over 10 Minutes:** Irreversible brain damage almost certain.

وقتی ثانیه ها مهم است!

# SPOT A STROKE

LEARN THE WARNING SIGNS AND ACT FAST



**B**

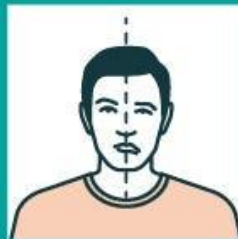
**E**

**F**

**A**

**S**

**T**



## BALANCE

LOSS OF BALANCE,  
HEADACHE  
OR DIZZINESS

## EYES

BLURRED VISION

## FACE

ONE SIDE OF THE  
FACE IS DROOPING

## ARMS

ARM OR LEG  
WEAKNESS

## SPEECH

SPEECH DIFFICULTY

## TIME

TIME TO CALL  
FOR AMBULANCE  
IMMEDIATELY



**CALL 911 IMMEDIATELY**

BLS 2021

## 5 TOP MESSAGES



1. RECOGNISE CARDIAC ARREST  
AND START CPR

2. ALERT EMERGENCY MEDICAL  
SERVICES

3. START CHEST COMPRESSIONS

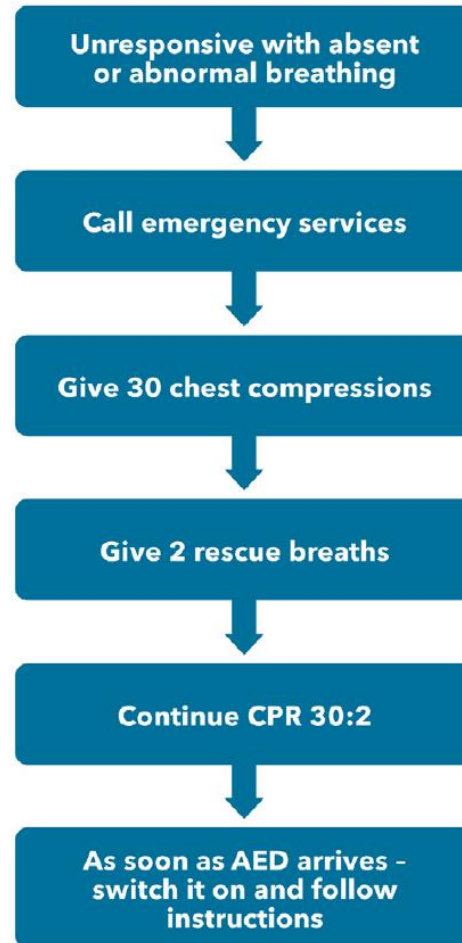
4. GET AN AUTOMATED EXTERNAL  
DEFIBRILLATOR (AED)

5. LEARN HOW TO DO CPR







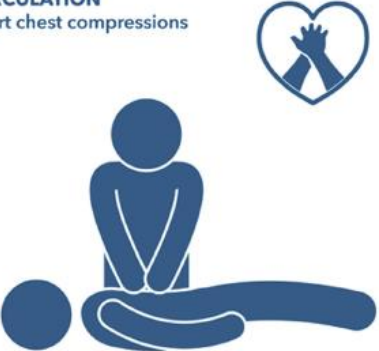
# احیا قلبی ریوی پایه

## Basic Life Support

## BASIC LIFE SUPPORT



# BASIC LIFE SUPPORT STEP-BY-STEP

SEQUENCE/ACTION	TECHNICAL DESCRIPTION
<p><b>SAFETY</b></p> 	<ul style="list-style-type: none"> <li>• Make sure that you, the victim and any bystanders are safe</li> </ul>
<p><b>RESPONSE</b> Check for a response</p> 	<ul style="list-style-type: none"> <li>• Shake the victim gently by the shoulders and ask loudly: "Are you all right?"</li> </ul>
<p><b>AIRWAY</b> Open the airway</p> 	<ul style="list-style-type: none"> <li>• If there is no response, position the victim on their back</li> <li>• With your hand on the forehead and your fingertips under the point of the chin, gently tilt the victim's head backwards, lifting the chin to open the airway</li> </ul>
<p><b>BREATHING</b> Look, listen and feel for breathing</p> 	<ul style="list-style-type: none"> <li>• Look, listen and feel for breathing for <b>no more</b> than 10 seconds</li> <li>• A victim who is barely breathing, or taking infrequent, slow and noisy gasps, is not breathing <b>normally</b></li> </ul>
<p><b>ABSENT OR ABNORMAL BREATHING</b> Alert emergency services</p> 	<ul style="list-style-type: none"> <li>• If breathing is absent or abnormal, ask a helper to call the emergency services or call them yourself</li> <li>• Stay with the victim if possible</li> <li>• Activate the speaker function or hands-free option on the telephone so that you can start CPR whilst talking to the dispatcher</li> </ul>
<p><b>SEND FOR AED</b> Send someone to get an AED</p> 	<ul style="list-style-type: none"> <li>• Send someone to find and bring back an AED if available</li> <li>• If you are on your own, <b>DO NOT</b> leave the victim, but start CPR</li> </ul>
<p><b>CIRCULATION</b> Start chest compressions</p> 	<ul style="list-style-type: none"> <li>• Kneel by the side of the victim</li> <li>• Place the heel of one hand in the centre of the victim's chest - this is the lower half of the victim's breastbone (sternum)</li> <li>• Place the heel of your other hand on top of the first hand and interlock your fingers</li> <li>• Keep your arms straight</li> <li>• Position yourself vertically above the victim's chest and press down on the sternum at least 5 cm (but not more than 6 cm)</li> <li>• After each compression, release all the pressure on the chest without losing contact between your hands and the sternum</li> <li>• Repeat at a rate of 100-120 min<sup>-1</sup></li> </ul>

# Chain of Survival

The links in the new AHA ECC Adult Chain of Survival are as follows:

1. Immediate **recognition** of cardiac arrest and **activation** of the emergency response system
2. Early **CPR** with an emphasis on chest compressions
3. Rapid **defibrillation**
4. Effective **advanced life support**
5. Integrated **post-cardiac arrest care**





# ارزیابی و درخواست کمک از اورژانس

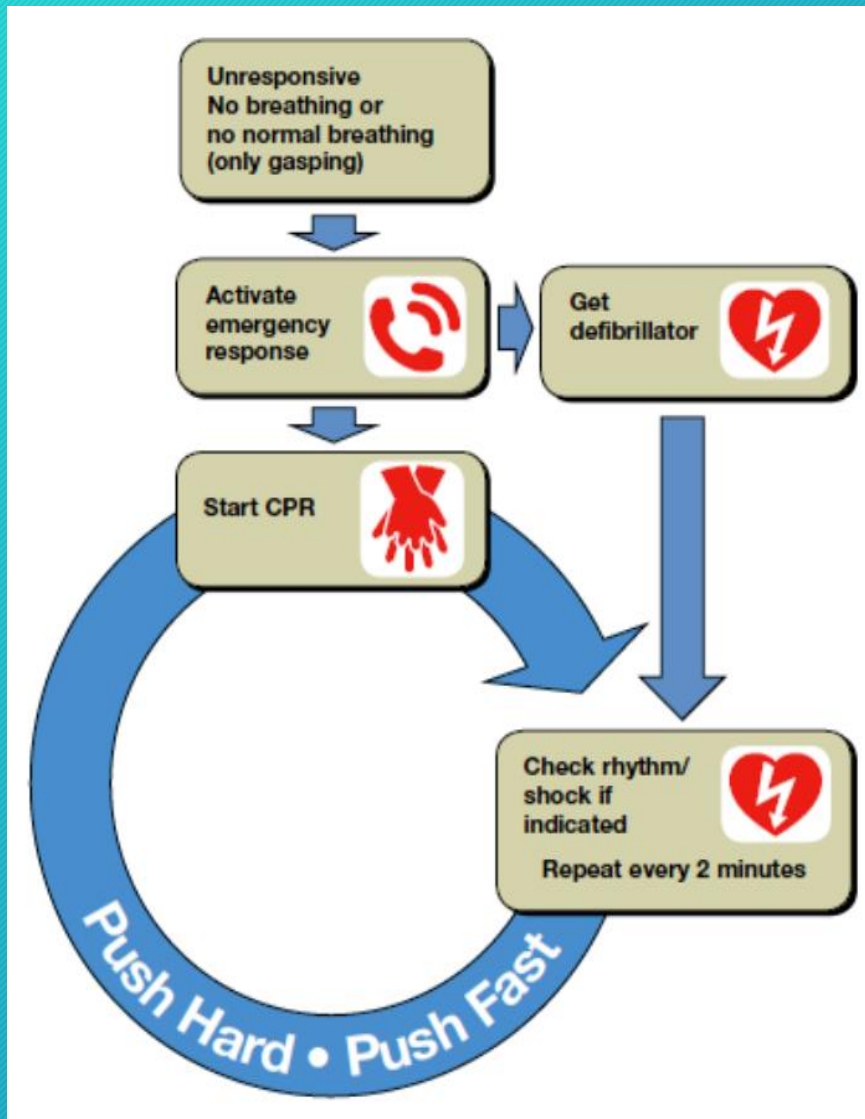


## 1. عدم پاسخگویی

- کاهش هوشیاری ناگهانی و تنفس غیر طبیعی

## 2. درخواست کمک

- نکته اصلی بررسی همزمان ضربان قلب، نحوه تنفس و هوشیاری و پاسخگویی بیمار است.
- زمان برای چک کردن ضربان قلب تلف نکنید!



# Simplified BLS Algorithm



# CPR: How to save a life

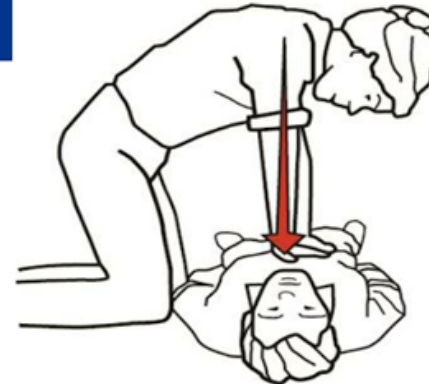
"The very first thing to do if you find someone **unconscious and unresponsive**, is to try and **rouse them** and **check whether they are breathing** normally. If you cannot wake them, and they are not breathing normally, this constitutes a **life-threatening medical emergency**, which requires immediate action."

1



Lay the unresponsive person on their back on a flat surface

2



Place one of your hands flat in the middle of the person's chest, and the other hand on top of it.

3

Press down hard, compressing the chest by about 5cm, and then release the pressure to allow the heart to refill with blood. For infants, use one hand only to a depth of 4cm. For tiny babies, use two fingers only.

4

Repeat the chest compressions at a rate of about two compressions per second.

5

For every 30 chest compressions, give the person two rescue breaths.

6

Rescue breaths are achieved by pinching the person's nose closed, tilting their head back and covering their mouth with yours, then exhaling into their mouth until the chest rises. If you are unable or unwilling to give mouth-to-mouth breaths, then continue with the chest compressions only.

7

Continue to perform CPR until the person revives, or professional help arrives.



American  
Heart  
Association.

[heart.org/handsonlycpr](http://heart.org/handsonlycpr)

# Learn Hands-Only CPR

CPR WEEK JUNE 1-7

2 STEPS  
TO SAVE  
A LIFE

## **HANDS-ONLY CPR**

CPR can double or even triple a person's chance of survival.



#CPRSAVESLIVES



# COVID-19 and Adult CPR

If an adult's heart stops and you're worried that they may have COVID-19, you can still help by performing Hands-Only CPR.



American  
Heart  
Association.

## Step 1



Phone 9-1-1  
and get an AED.

## Step 2



Cover your own  
mouth and nose  
with a face mask  
or cloth.



Cover the  
person's mouth  
and nose with  
a face mask or  
cloth.

## Step 3



Perform  
Hands-Only CPR.  
Push hard and fast on  
the center of the chest  
at a rate of 100 to 120  
compressions  
per minute.

## Step 4



Use an AED as  
soon as it is  
available.

# COVID-19 and Child and Infant CPR

If a child or an infant's heart stops and you're worried that they may have COVID-19, you can still help.



American  
Heart  
Association.

## Step 1

Make sure the scene is safe.

Check to see if the child or infant is awake and breathing normally.



## Step 2

Shout for help.

If you're alone, phone 9-1-1 from a cell phone, perform CPR with 30 compressions and then 2 breaths (if you're willing and able) for 5 cycles, and get an AED.

If help is available, phone 9-1-1. Send someone to get an AED while you start CPR.



## Step 3

Provide CPR with compressions and breaths (if you're willing and able).



### ■ Start child CPR

Push on the middle of the chest 30 times at a depth of 2 inches with 1 or 2 hands.

Provide 30 compressions and then 2 breaths. Repeat cycles.



### ■ Start infant CPR

Push on the middle of the chest 30 times at a depth of 1½ inches with 2 fingers.

Provide 30 compressions and then 2 breaths. Repeat cycles.

Use the AED as soon as it arrives. Continue CPR until EMS arrives.

# عمق ماساژ قلبی



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5 – 6 cm

Class I, LOE C-LD

**PUSH HARD !**

# تعداد ماساژ قلبی



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Anesthesiology, Pain Medicine, Critical Care

100 – 120

Class IIa, LOE C-LD

**PUSH FAST !**



# FULLY RECOIL !

do not leaning on chest

Class IIa, LOE C-LD

نسبت تعداد ماساژ به تنفس



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30 : 2

**AVOID HYPERVENTILATION !**

Class IIa, LOE C-LD

# احيا قلبی ریوی تیم محور



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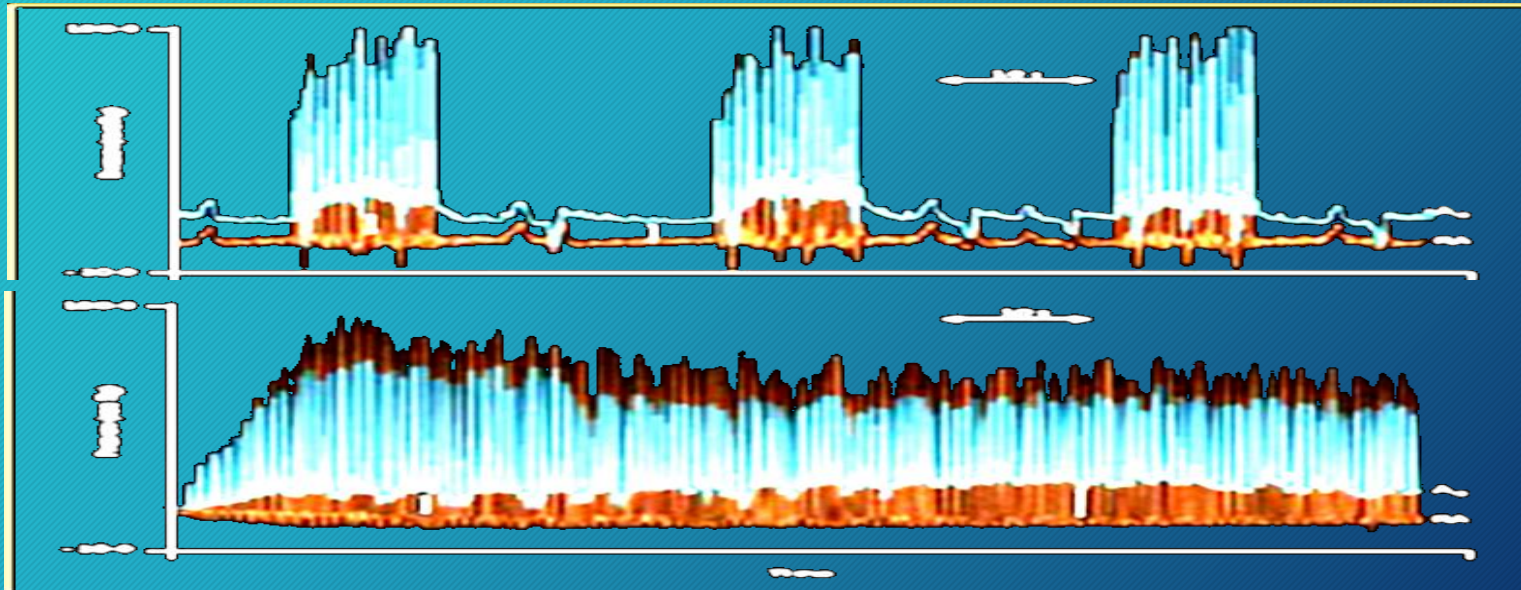


# CPR (BLS): CPR vs CCCR



Essential Actions:

- Chest Wall Compression



# CPR (BLS): CPR & AED



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## Essential Actions:

- Chest Wall Compression
- Early Defibrillation



# باید ها و نبایدهای احیا قلبی ریوی پایه



Rescuers Should	Rescuers Should <i>Not</i>
Perform chest compressions at a rate of 100-120/min	Compress at a rate slower than 100/min or faster than 120/min
Compress to a depth of at least 2 inches (5 cm)	Compress to a depth of less than 2 inches (5 cm) or greater than 2.4 inches (6 cm)
Allow full recoil after each compression	Lean on the chest between compressions
Minimize pauses in compressions	Interrupt compressions for greater than 10 seconds
Ventilate adequately (2 breaths after 30 compressions, each breath delivered over 1 second, each causing chest rise)	Provide excessive ventilation (ie, too many breaths or breaths with excessive force)



# اجزا اصلی احیا با کیفیت قلبی ریوی



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Component	Adults and Adolescents	Children (Age 1 Year to Puberty)	Infants (Age Less Than 1 Year, Excluding Newborns)
<b>Scene safety</b>	Make sure the environment is safe for rescuers and victim		
<b>Recognition of cardiac arrest</b>	<p>Check for responsiveness</p> <p>No breathing or only gasping (ie, no normal breathing)</p> <p>No definite pulse felt within 10 seconds</p> <p>(Breathing and pulse check can be performed simultaneously in less than 10 seconds)</p>		
<b>Activation of emergency response system</b>	<p>If you are alone with no mobile phone, leave the victim to activate the emergency response system and get the AED before beginning CPR</p> <p>Otherwise, send someone and begin CPR immediately; use the AED as soon as it is available</p>	<p><b>Witnessed collapse</b> Follow steps for adults and adolescents on the left</p> <p><b>Unwitnessed collapse</b> Give 2 minutes of CPR</p> <p>Leave the victim to activate the emergency response system and get the AED</p> <p>Return to the child or infant and resume CPR; use the AED as soon as it is available</p>	
<b>Compression-ventilation ratio without advanced airway</b>	<p><b>1 or 2 rescuers</b> 30:2</p>	<p><b>1 rescuer</b> 30:2</p> <p><b>2 or more rescuers</b> 15:2</p>	

# اجزا اصلی احیا با کیفیت قلبی ریوی



Component	Adults and Adolescents	Children (Age 1 Year to Puberty)	Infants (Age Less Than 1 Year, Excluding Newborns)
Compression-ventilation ratio <i>with advanced airway</i>	Continuous compressions at a rate of 100-120/min Give 1 breath every 6 seconds (10 breaths/min)		
Compression rate	100-120/min		
Compression depth	At least 2 inches (5 cm)*	At least one third AP diameter of chest About 2 inches (5 cm)	At least one third AP diameter of chest About 1½ inches (4 cm)
Hand placement	2 hands on the lower half of the breastbone (sternum)	2 hands or 1 hand (optional for very small child) on the lower half of the breastbone (sternum)	<b>1 rescuer</b> 2 fingers in the center of the chest, just below the nipple line  <b>2 or more rescuers</b> 2 thumb-encircling hands in the center of the chest, just below the nipple line
Chest recoil	Allow full recoil of chest after each compression; do not lean on the chest after each compression		
Minimizing interruptions	Limit interruptions in chest compressions to less than 10 seconds		



**1** Check for consciousness

Gently shake the victim's shoulders and try to make contact



**2** Check for breathing and open the airway

Look, listen and feel for breathing no longer than 10 seconds



Normal breathing

**3** If no or abnormal breathing - Call 112

Put the phone on speaker mode and do not cancel the call



**4** Begin CPR immediately

Alternate between 30 chest compressions and 2 rescue breaths



Continue with CPR without disruption until the person breathes normally or emergency personnel arrives. Blow until the chest rises. Push down on the chest hard, 100-120 times per minute. Do CPR on a hard surface.

**5** If an AED is available

Turn on the AED and attach the pads during CPR



Look closely at the pads images and follow the AED's instructions

After 2 minutes the AED will pause to analyze the heart rhythm - change the person who does the compressions.



After each analyze cycle continue with CPR for 2 minutes whether you had to give a shock or not.

**Put the person in recovery position and call 112**

Prevent hypothermia and keep monitoring the breathing



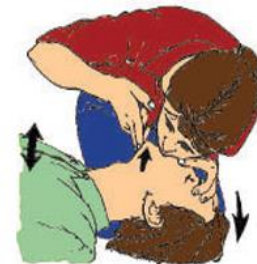
# RESUSCITATION (CPR)

**D**

**DANGER**

Check for hazards & ensure safety

**Adults & Children**



**R**

**RESPONSE**

Check to see if Unresponsive/Unconscious

A casualty who is unresponsive and not breathing normally needs urgent resuscitation

**A**

**AIRWAY**

Open airway, Head tilt/Chin Lift

**B**

**BREATHING**

Check breathing, if not breathing / abnormal breathing commence CPR

**C**

**CPR**

30 compressions : 2 breaths  
(if unwilling or unable to do breaths, consider doing chest compressions only)

**D**

**DEFIBRILLATOR (AED)**

Attach AED as soon as available and follow its prompts

**S**

**SEND FOR HELP**

Call the ambulance on 000

**Infants Under 12 months**



Continue sequence until responsiveness or normal breathing returns, or help arrives

	HEAD TILT	PRESSURE	DEPTH	BREATHS	RATIO	COMPRESSION RATE
ADULTS & CHILDREN	Yes	2 Hands	1/2 chest depth (Approx 5 cm)	Full breaths	30 Compressions: 2 Breaths	Compressions should be performed at the rate of almost 2 per second (i.e. continuous rate of 100 per minute)
INFANT (birth - 1)	No	2 Fingers	1/3 chest depth (Approx 4 cm)	Puffs	30 Compressions: 2 Breaths	

# BASIC LIFE SUPPORT STEP-BY-STEP

SEQUENCE/ACTION	TECHNICAL DESCRIPTION
<p><b>IF NO SHOCK IS ADVISED</b> Continue CPR</p> 	<ul style="list-style-type: none"><li>• <b>If no shock is advised</b>, immediately resume CPR and continue as directed by the AED</li></ul>
<p><b>IF NO AED IS AVAILABLE</b> Continue CPR</p> 	<ul style="list-style-type: none"><li>• If no AED is available, <b>OR</b> whilst waiting for one to arrive, continue CPR</li><li>• Do not interrupt resuscitation until:<ul style="list-style-type: none"><li>• A health professional tells you to stop <b>OR</b></li><li>• The victim is definitely waking up, moving, opening eyes, and breathing normally</li></ul></li><li>• <b>OR</b></li><li>• You become exhausted</li><li>• It is rare for CPR alone to restart the heart. Unless you are certain that the victim has recovered continue CPR</li><li>• Signs that the victim has recovered<ul style="list-style-type: none"><li>• Waking-up</li><li>• Moving</li><li>• Opening eyes</li><li>• Breathing normally</li></ul></li></ul>
<p><b>IF UNRESPONSIVE BUT BREATHING NORMALLY</b> Place in the Recovery Position</p> 	<ul style="list-style-type: none"><li>• If you are certain that the victim is breathing normally but still unresponsive, place them in the recovery position <b>SEE FIRST AID SECTION</b></li><li>• Be prepared to restart CPR immediately if the victim becomes unresponsive, with absent or abnormal breathing</li></ul>

## CPR - 1 Rescuer

- Look, listen, and feel for breathing



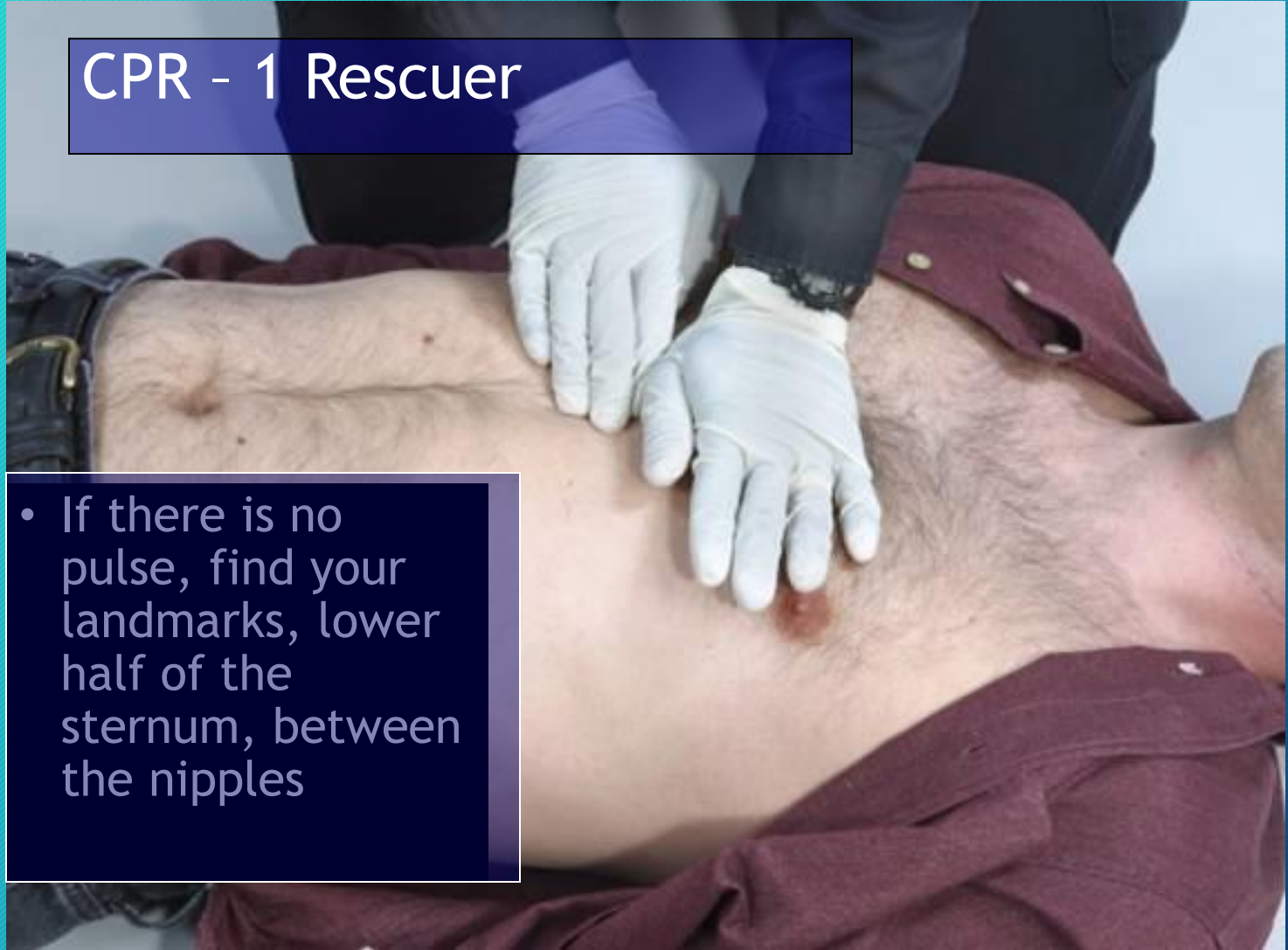
## CPR - 1 Rescuer

- Check for a pulse (≤ 10 seconds)



## CPR - 1 Rescuer

- If there is no pulse, find your landmarks, lower half of the sternum, between the nipples





❖ *Begin chest compressions*

□ دستها عمود بر قفسه سینه  
بدون خمیدگی آرنج ها  
5cm - 6cm





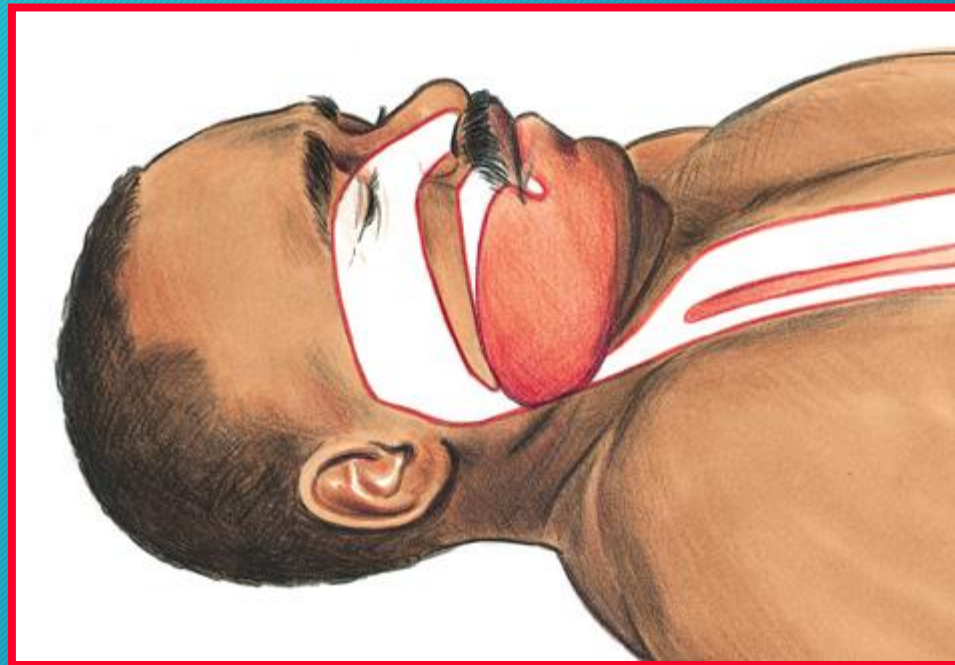
# CPR - 2 Rescuer



# انسداد راه هوایی

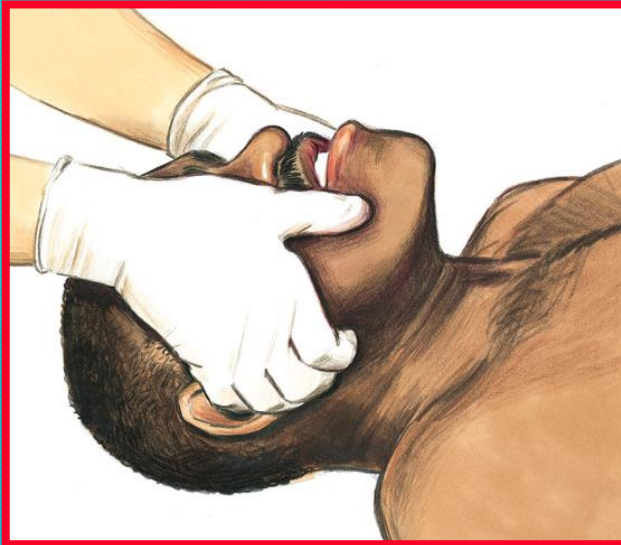


شایعترین علت : زبان، اپیگلوت

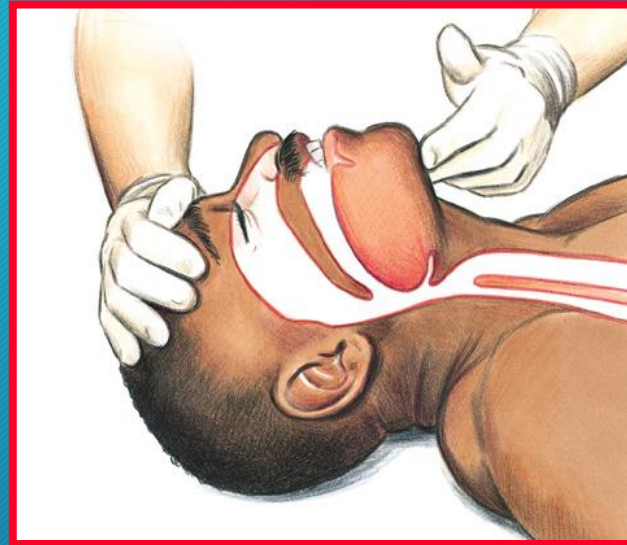


# Opening the Airway

- Jaw thrust



Head tilt–chin lift

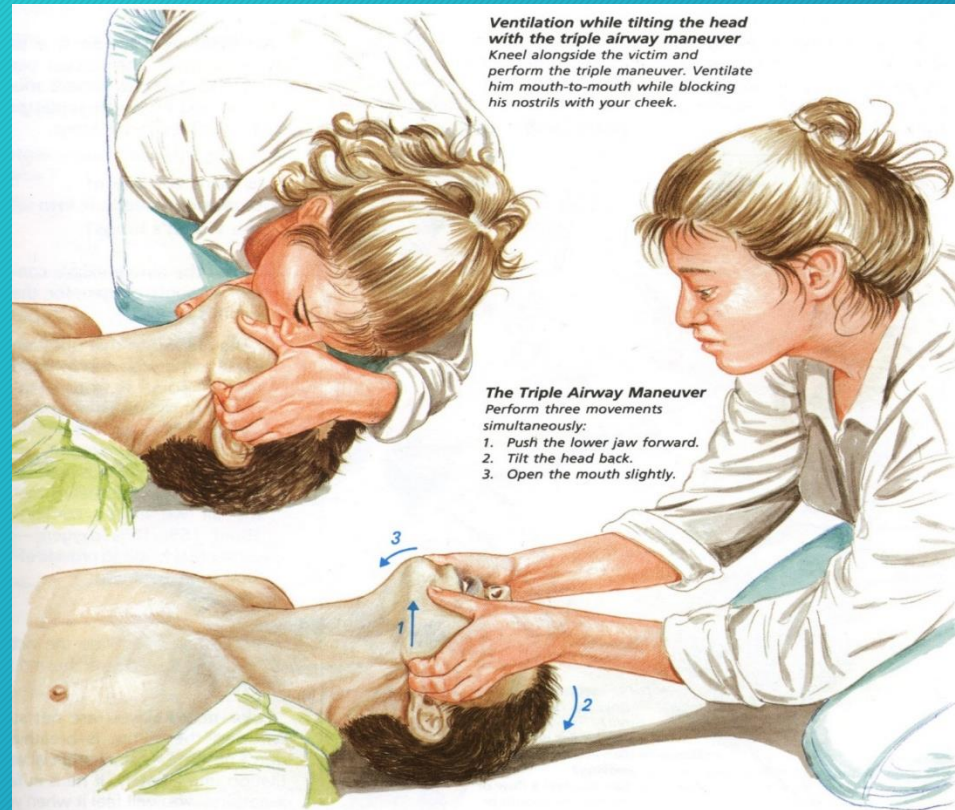


# دادن نفس به بیمار (دهان به دهان)



- Pinch the nose
- Take a normal breath
- Place lips over mouth
- Blow until the chest rises
- Avoid excessive ventilation
- Take about 1 second
- Allow chest to fall
- Repeat

# JAW THRUST (IN TRAUMATIC PATIENT)





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**با تشکر از توجه شما**

همیشه سربلند و پیروز باشید