



# Újraélesztés -2017

**Molnár Tihamér**

**PTE AOK AIT**

**[www.erc.edu](http://www.erc.edu)**



# Basic Life Support & Automated External Defibrillation Course

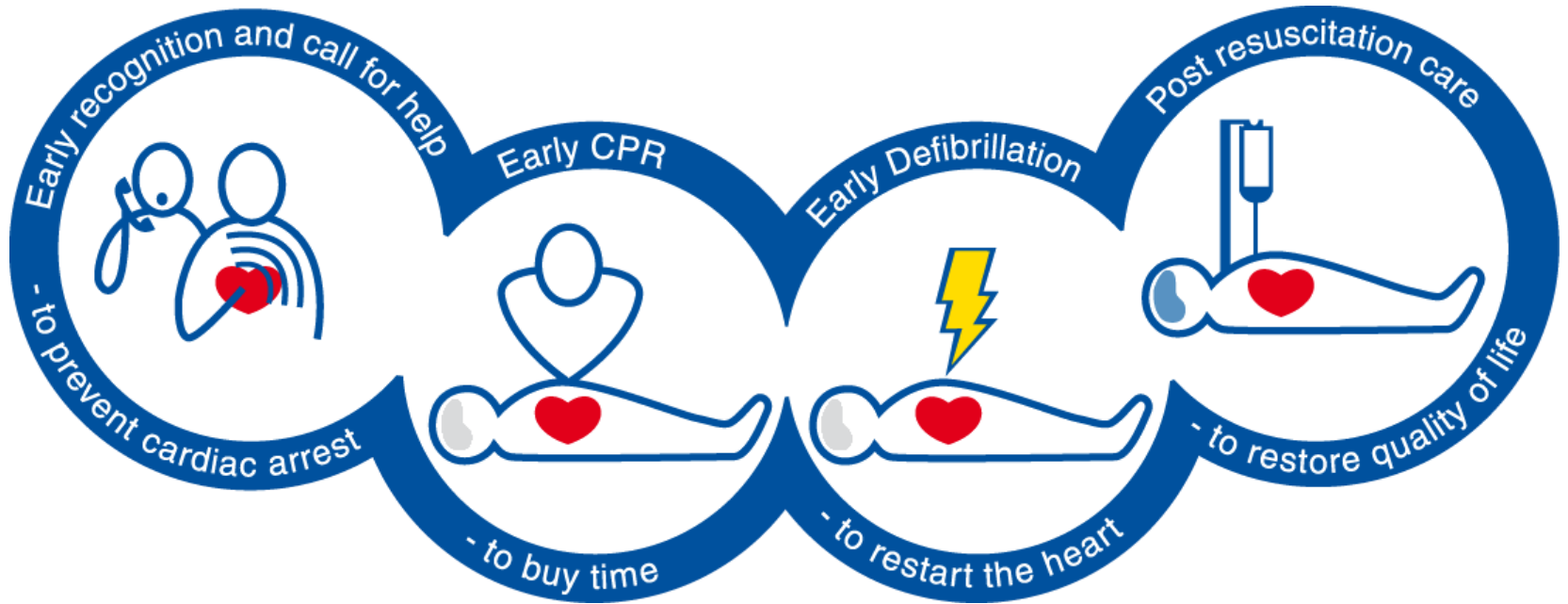


## BACKGROUND

- Approximately 700,000 cardiac arrests per year in Europe
- Survival to hospital discharge presently approximately 5-10%
- Bystander CPR vital intervention before arrival of emergency services
- Early resuscitation and prompt defibrillation (within 1-2 minutes) can result in >60% survival



# CHAIN OF SURVIVAL





**Approach safely**

**Check response**

**Shout for help**

**Open airway**

**Check breathing**

**Call 104**

**30 chest compressions**

**2 rescue breaths**





## APPROACH SAFELY!

Scene  
Rescuer  
Victim  
Bystanders

**Approach safely**

Check response

Shout for help

Open airway

Check breathing

Call 104

30 chest compressions

2 rescue breaths



## CHECK RESPONSE



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Approach safely

**Check response**

Shout for help

Open airway

Check breathing

Call 104

30 chest compressions

2 rescue breaths



## CHECK RESPONSE



Shake shoulders gently

Ask "Are you all right?"

If he responds

- Leave as you find him.
- Find out what is wrong.
- Reassess regularly.





## SHOUT FOR HELP



Approach safely

Check response

**Shout for help**

Open airway

Check breathing

Call 104

30 chest compressions

2 rescue breaths



## OPEN AIRWAY



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Approach safely

Check response

Shout for help

**Open airway**

Check breathing

Call 104

30 chest compressions

2 rescue breaths



## CHECK BREATHING



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Approach safely

Check response

Shout for help

Open airway

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30 chest compressions

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## CHECK BREATHING



- Look, listen and feel for **NORMAL** breathing
- Do not confuse agonal breathing with **NORMAL** breathing



Approach safely

Check response

Shout for help

Open airway

Check breathing

**Call 104**

30 chest compressions

2 rescue breaths



## 30 CHEST COMPRESSIONS



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Approach safely

Check response

Shout for help

Open airway

Check breathing

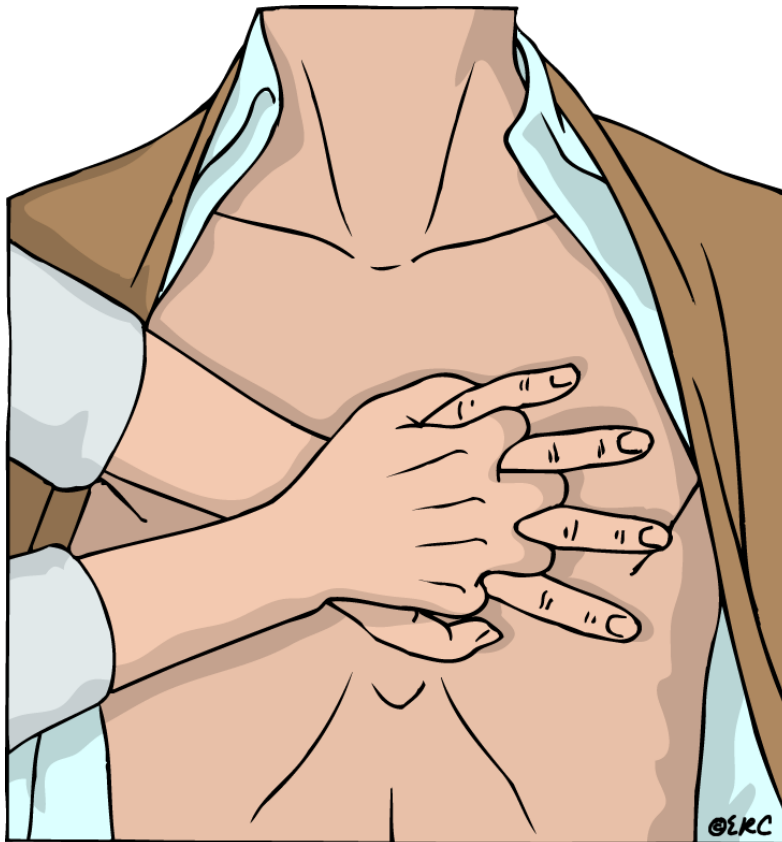
Call 104

**30 chest compressions**

2 rescue breaths



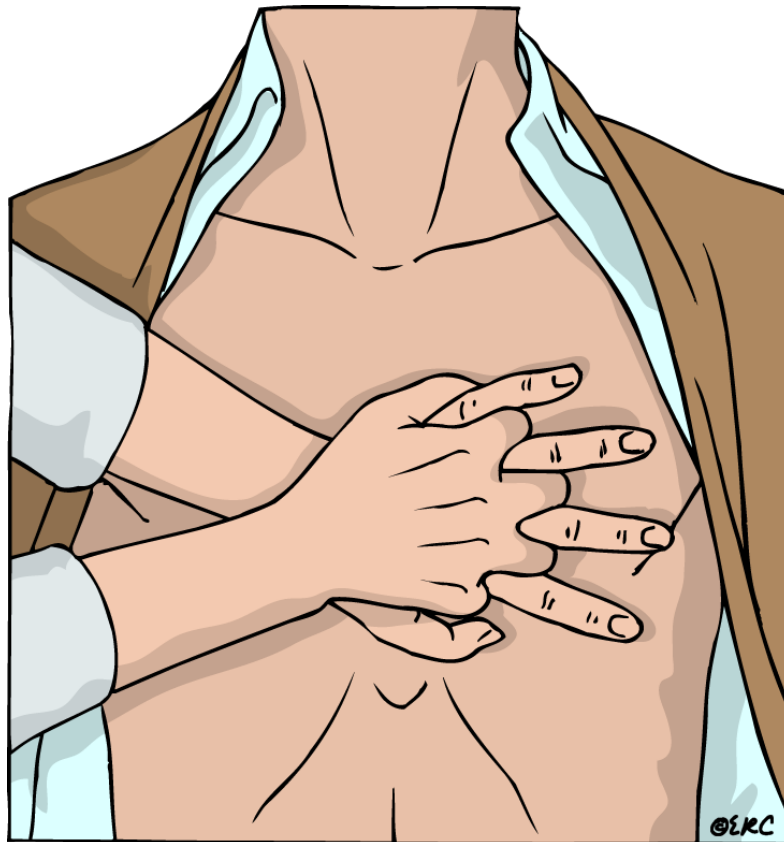
## CHEST COMPRESSIONS



- Place the heel of one hand in the centre of the chest
- Place other hand on top
- Interlock fingers
- Compress the chest
  - Rate 100 - 120 min<sup>-1</sup>
  - Depth min. 5 cm, max. 6 cm
  - Equal compression : relaxation



## CHEST COMPRESSIONS

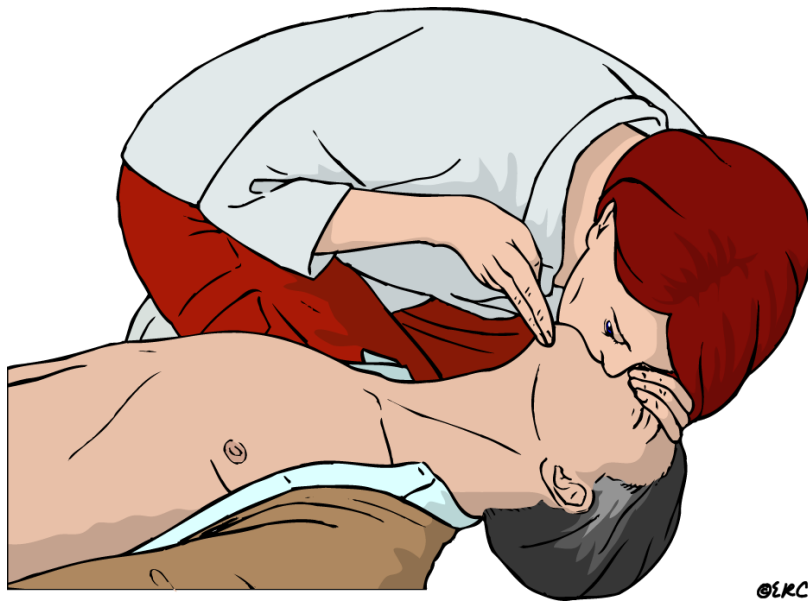


- When possible change CPR operator every 2 min





## RESCUE BREATHS



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Approach safely

Check response

Shout for help

Open airway

Check breathing

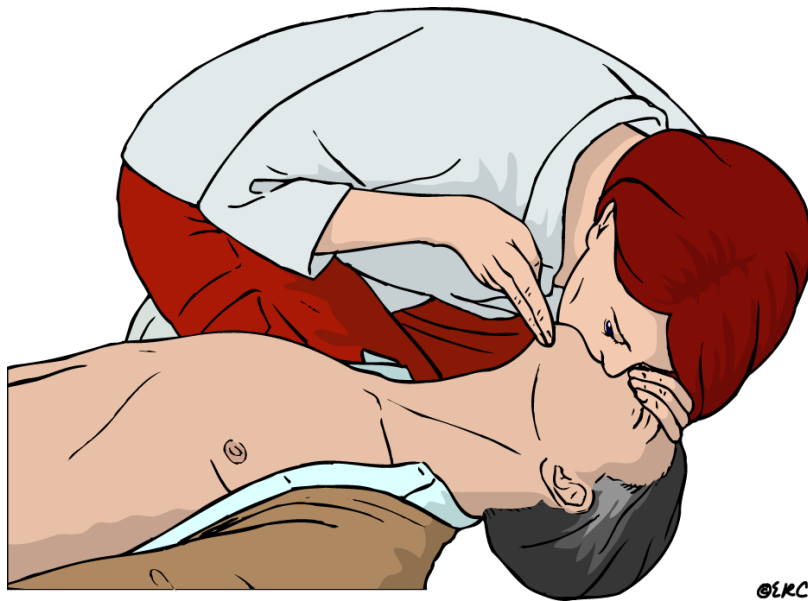
Call 104

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2 rescue breaths



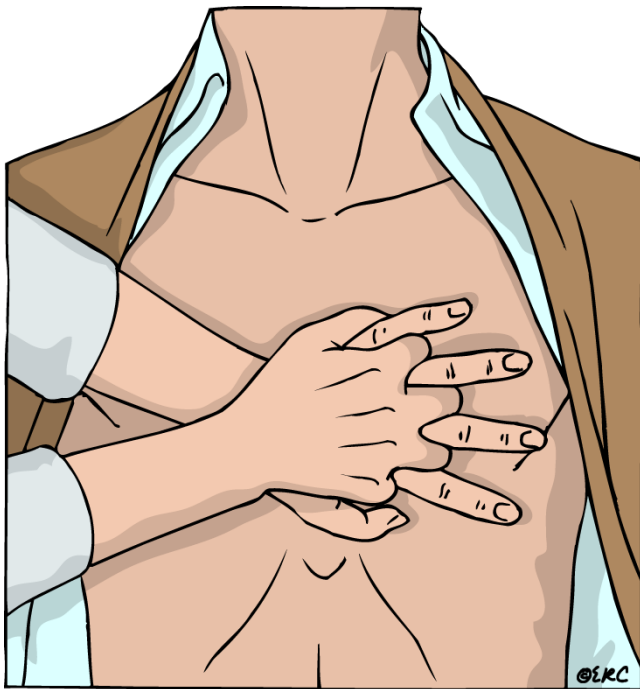
## RESCUE BREATHS



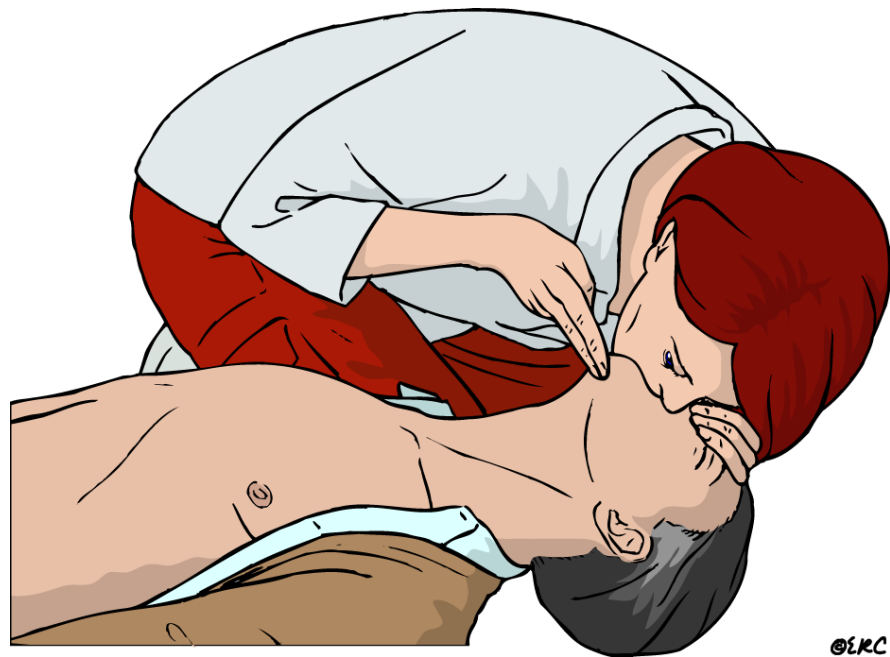
- Pinch the nose
- Take a normal breath
- Place lips over mouth
- Blow until the chest rises
- Take about 1 second
- Allow chest to fall
- Repeat



# CONTINUE CPR



30



2



**Approach safely**

**Check response**

**Shout for help**

**Open airway**

**Check breathing**

**Call 104**

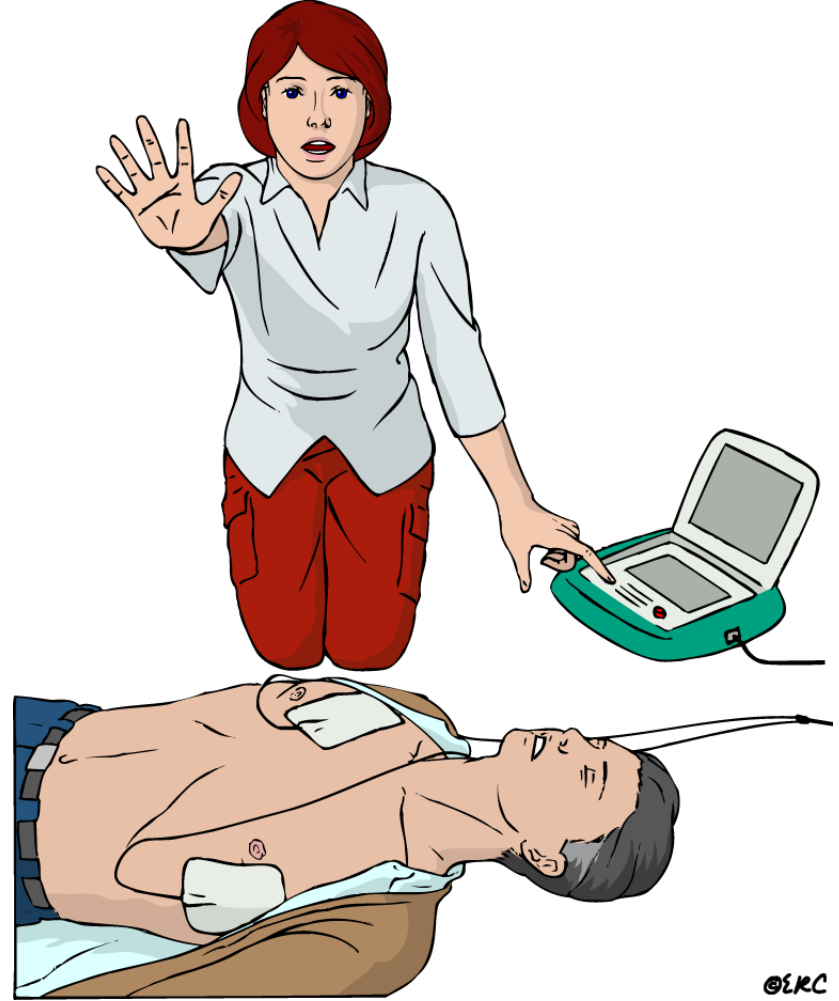
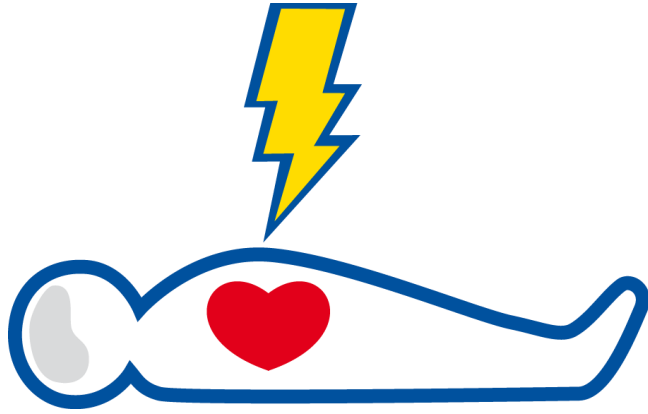
**30 chest compressions**

**2 rescue breaths**





# DEFIBRILLATION





Approach safely

Check response

Shout for help

Open airway

Check breathing

Call 104

Attach AED

Follow voice prompts



## SWITCH ON AED



- Some AEDs will automatically switch themselves on when the lid is opened



# ATTACH PADS TO CASUALTY'S BARE CHEST



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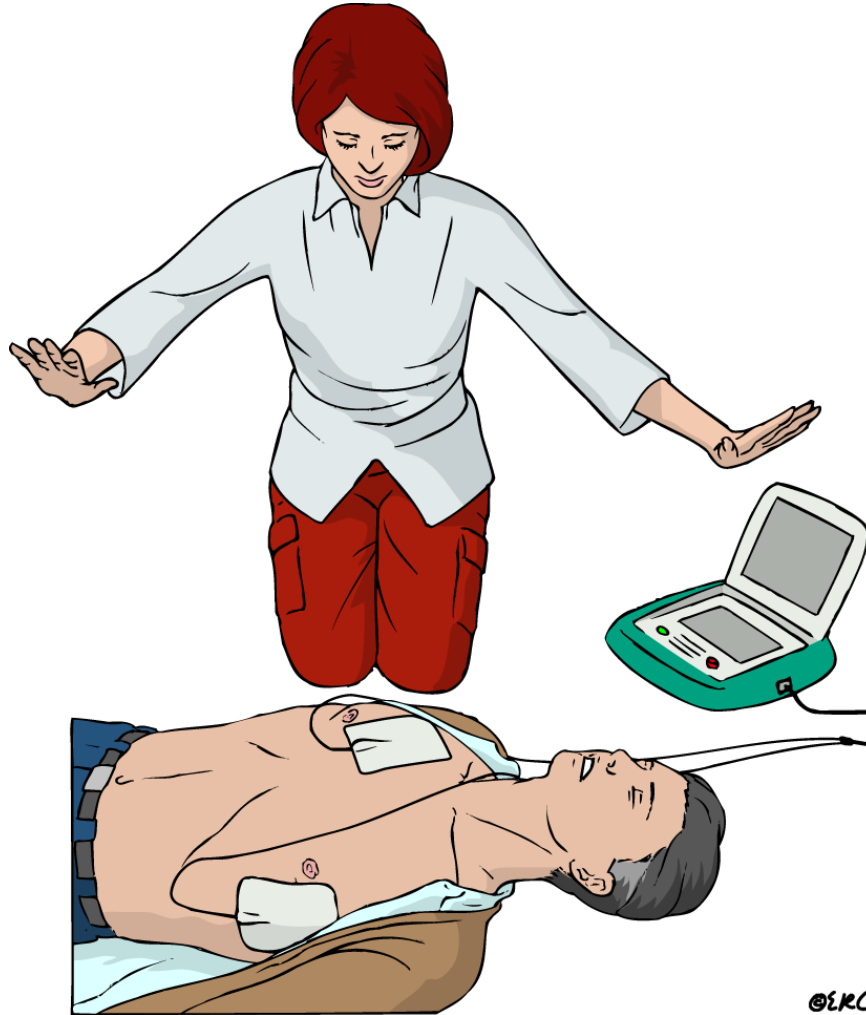


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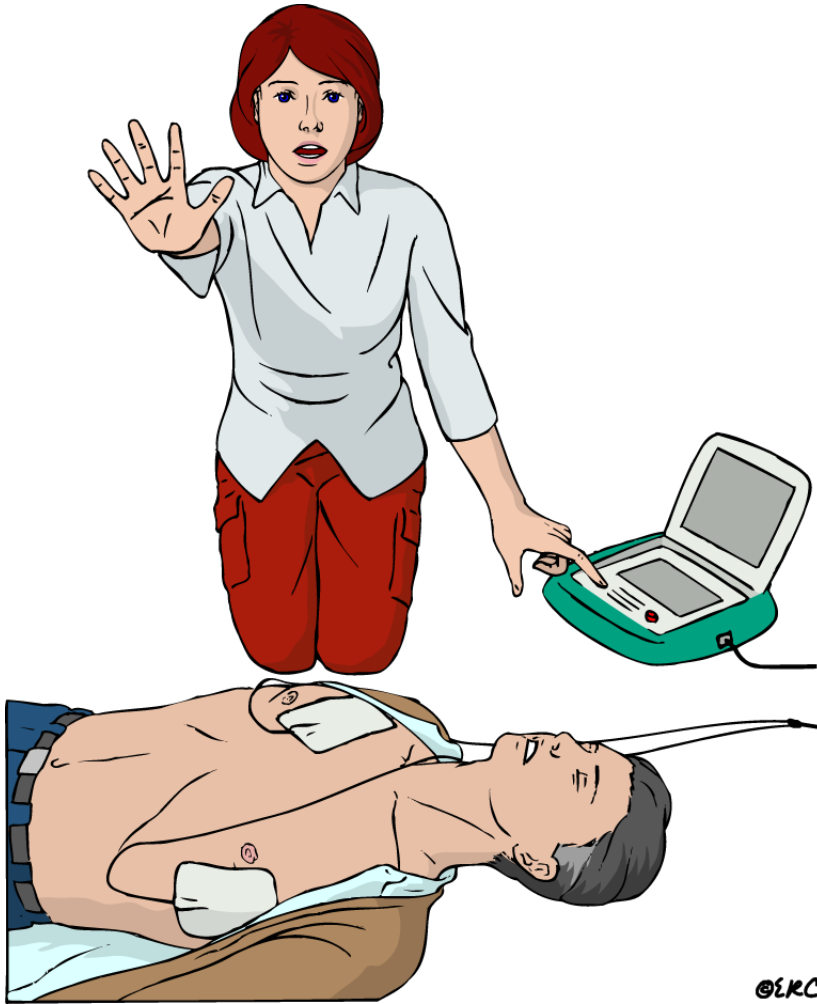


# ANALYSING RHYTHM DO NOT TOUCH VICTIM





## SHOCK INDICATED



- Stand clear
- Deliver shock

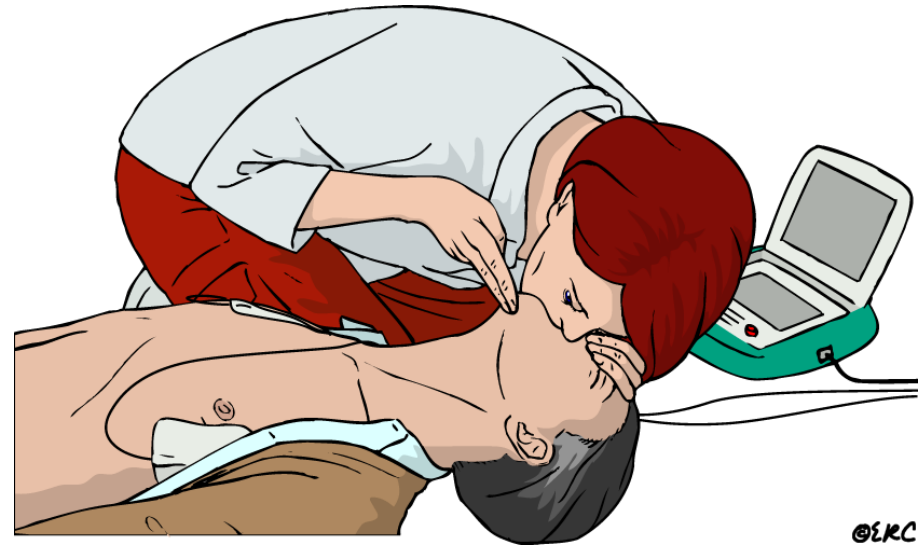


# SHOCK DELIVERED FOLLOW AED INSTRUCTIONS



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30



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2

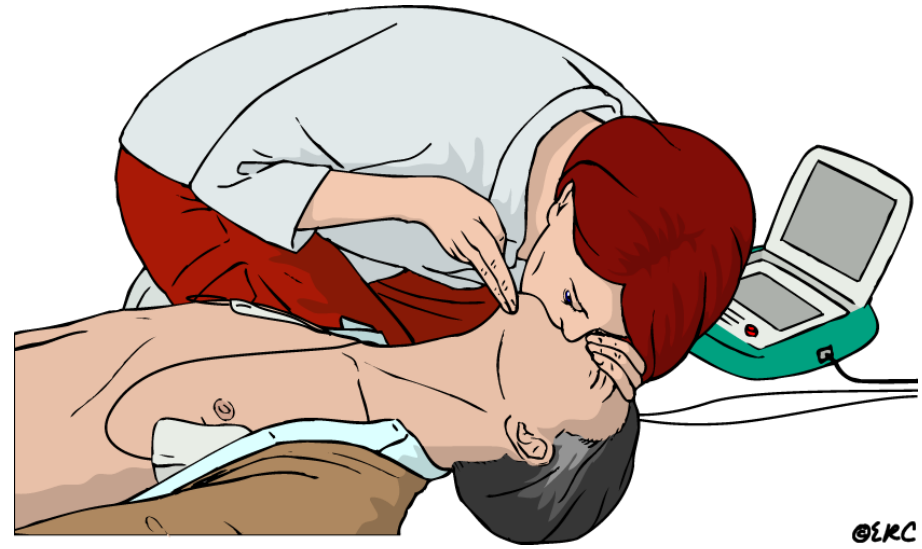


**NO SHOCK ADVISED**  
**FOLLOW AED INSTRUCTIONS**



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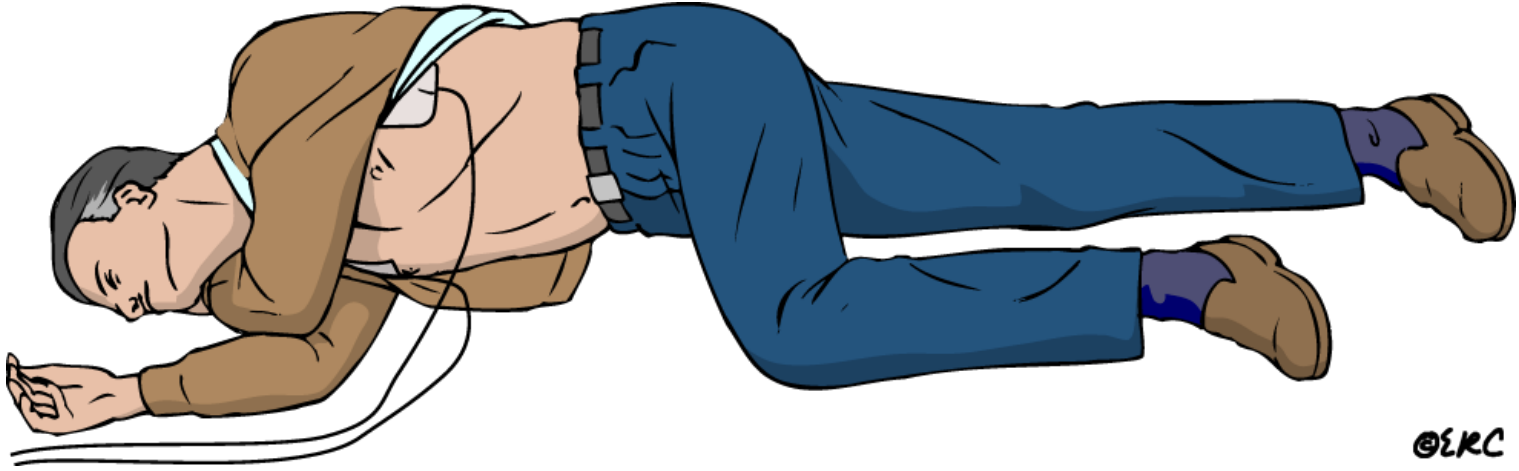


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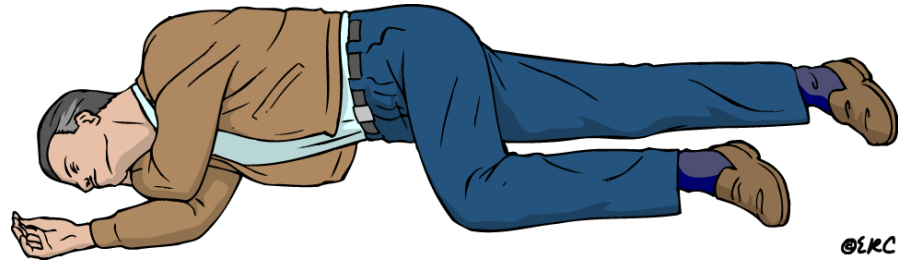
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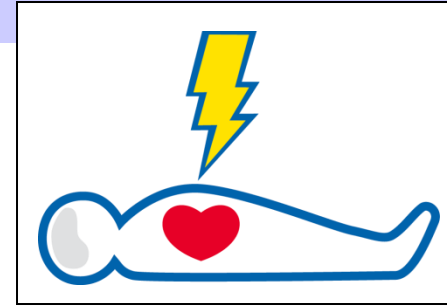


IF VICTIM STARTS TO  
BREATHE NORMALLY PLACE  
IN RECOVERY POSITION



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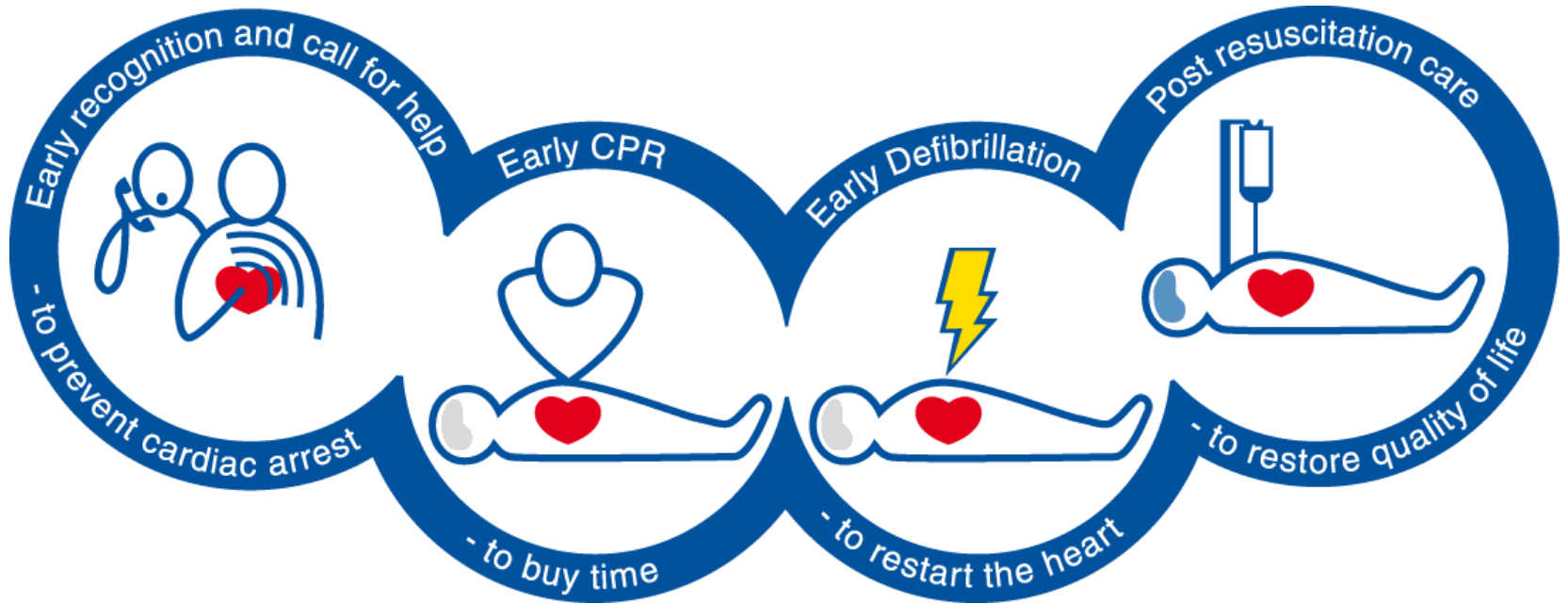


# Advanced Life Support



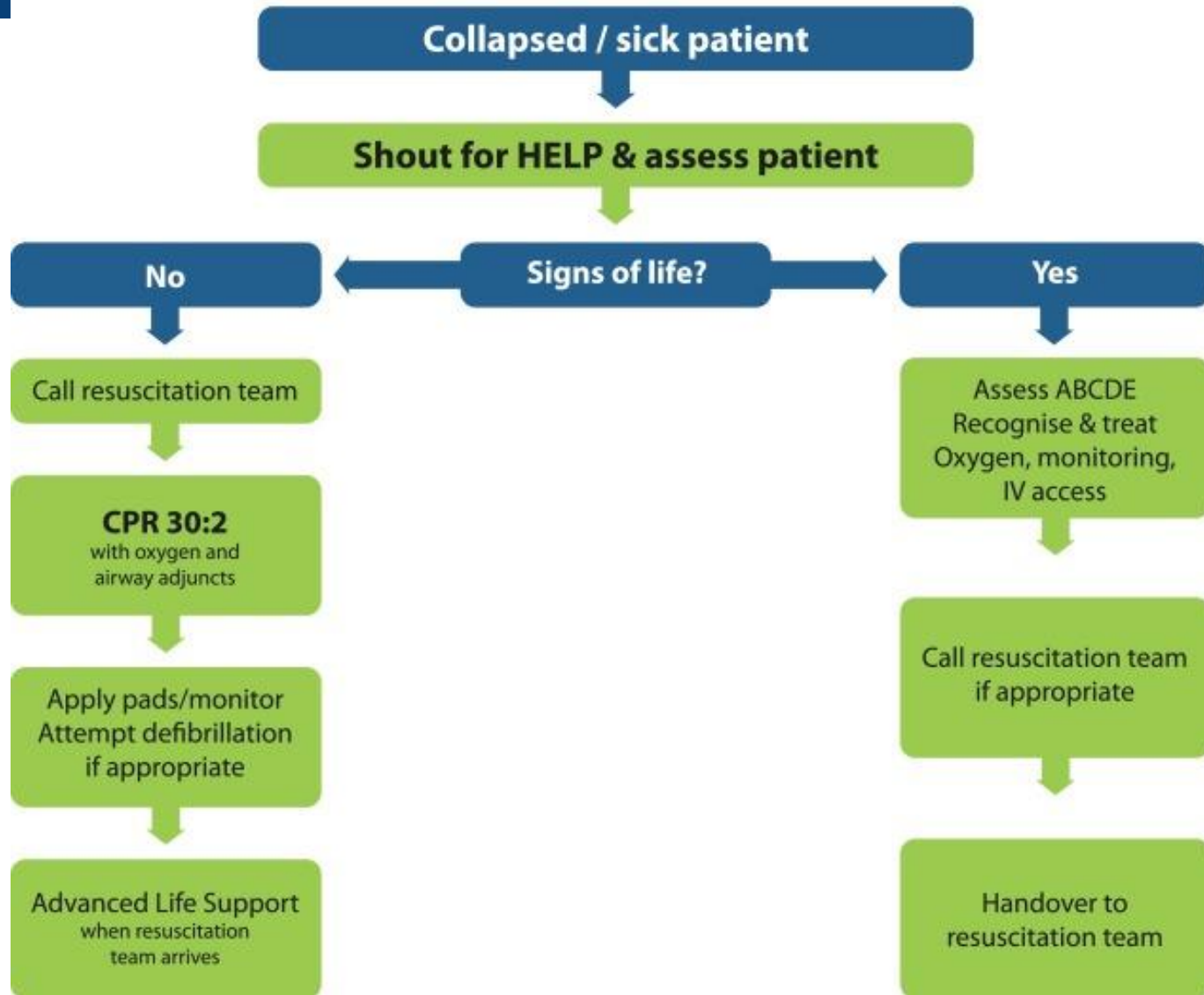


# CHAIN OF SURVIVAL



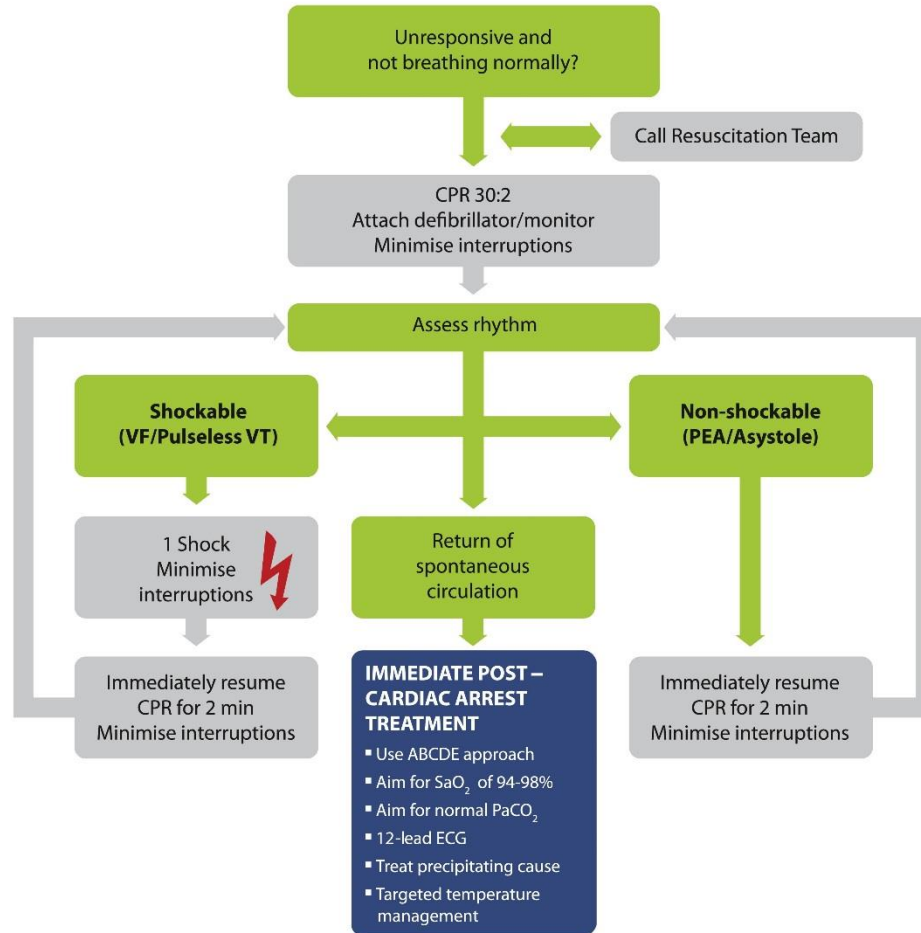


## In-hospital Resuscitation





## Advanced Life Support



### DURING CPR

- Ensure high quality chest compressions
- Minimise interruptions to compressions
- Give oxygen
- Use waveform capnography
- Continuous compressions when advanced airway in place
- Vascular access (intravenous or intraosseous)
- Give adrenaline every 3-5 min
- Give amiodarone after 3 shocks

### TREAT REVERSIBLE CAUSES

- |                               |                                    |
|-------------------------------|------------------------------------|
| Hypoxia                       | Thrombosis – coronary or pulmonary |
| Hypovolaemia                  | Tension pneumothorax               |
| Hypo-/hyperkalaemia/metabolic | Tamponade – cardiac                |
| Hypothermia/hyperthermia      | Toxins                             |

### CONSIDER

- Ultrasound imaging
- Mechanical chest compressions to facilitate transfer/treatment
- Coronary angiography and percutaneous coronary intervention
- Extracorporeal CPR



# ICU, CCU, Cath.Lab

1. Confirm cardiac arrest and shout for help.
2. If the initial rhythm is VF/pVT, give up to three quick successive (stacked) shocks.
3. Rapidly check for a rhythm change and if appropriate ROSC after each defibrillation attempt.
4. Start chest compressions and continue CPR for 2 min if the third shock is unsuccessful.



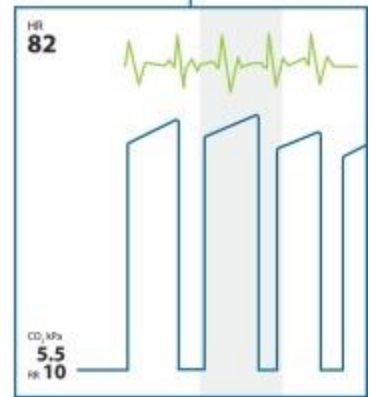
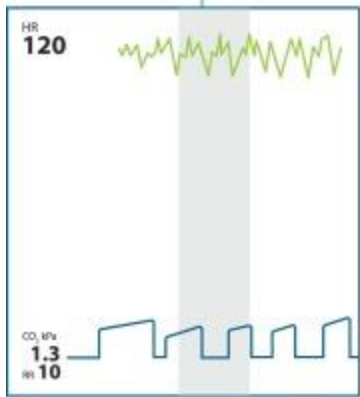
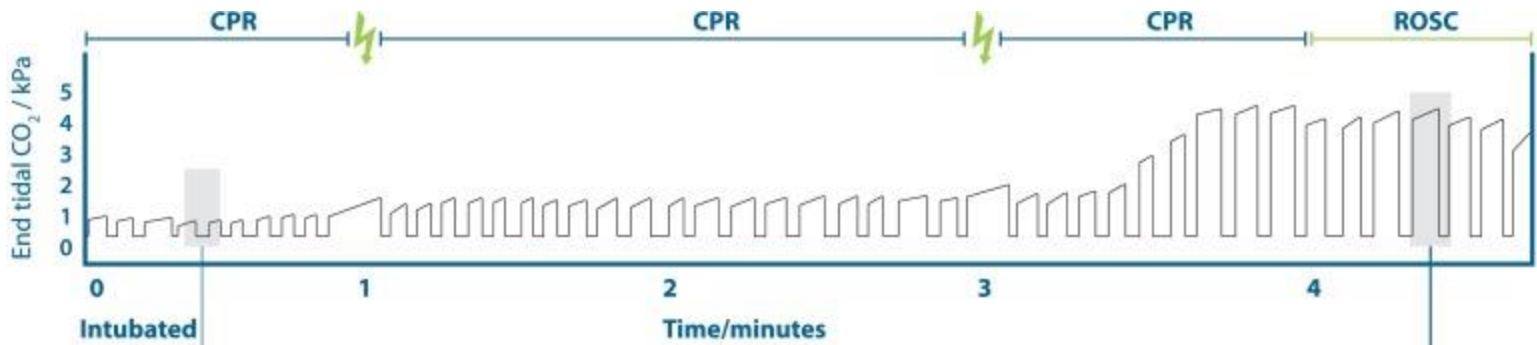
## Energy Level

- First shock: 150-200J (BTE), success rate: 90%  
(at least 120 J if RLB, success rate: 85%)
- Second shock: 150-360 J
- Third shock: 150-360 J



# Airway

- Either an advanced airway (tracheal intubation or SGA) or a bag-mask for airway management during CPR
- The type of airway used may depend on the skills and training
- Comatose pts. after initial resuscitation ultimately require tracheal intubation





## Drug

Adrenaline:

- the first drug used in cardiac arrest of any cause: it is included in the ALS algorithm for use every 3–5 min of CPR (alternate cycles).
- preferred in the treatment of anaphylaxis
- a second-line treatment for cardiogenic shock.
- during cardiac arrest, the initial IV/IO dose of adrenaline is 1 mg.





# Anti-arrhythmics

Amiodarone:

- refractory VF/pVT
- haemodynamically stable ventricular tachycardia (VT) and other resistant tachyarrhythmias
- initial intravenous dose of 300 mg amiodarone, diluted in 5% glucose to a volume of 20 ml after the 3rd shock
- 150mg can be repeated after 5th shock