

Basic Life Support & Automated External Defibrillation

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CPR

Objectives

At the end of the lecture , participants should be able to demonstrate :

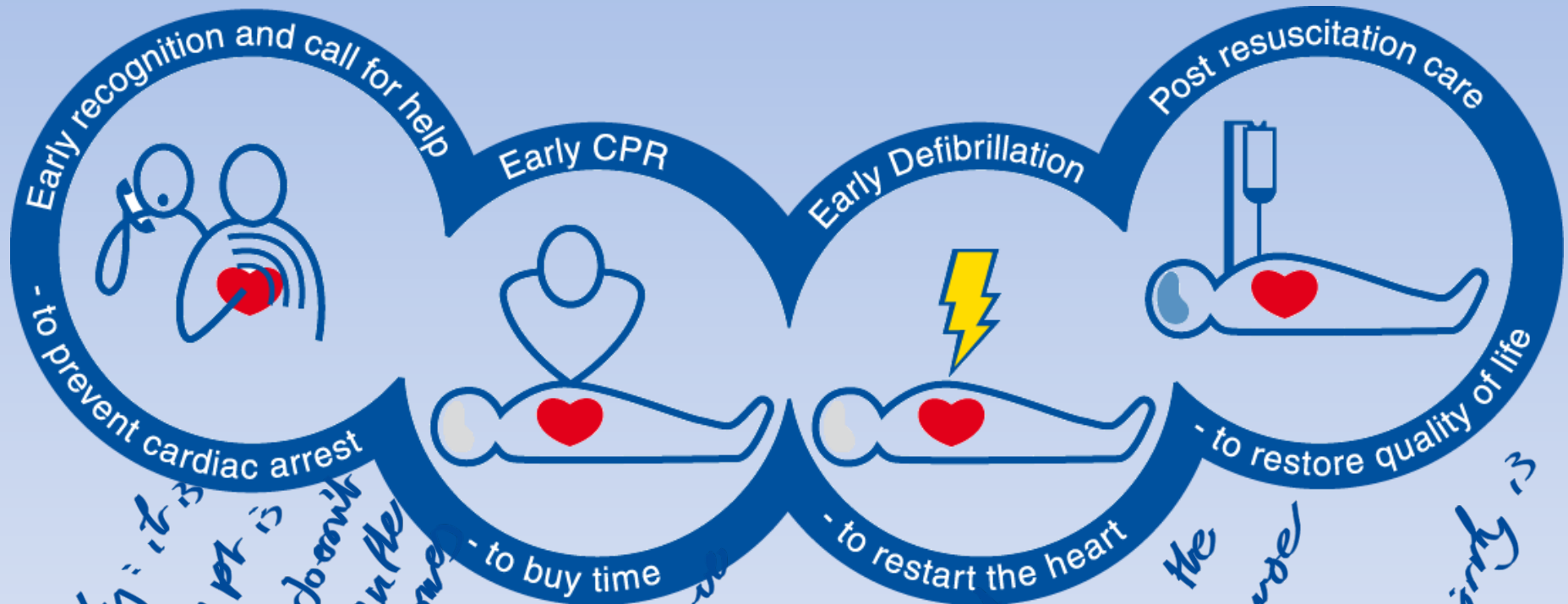
- How to assess the collapsed victim.
- How to perform chest compression and rescue breathing.
- How to operate an Automated External Defibrillator safely.
- How to place an unconscious breathing victim in the recovery position.

* REFERENCES : AHA AND EUREPEAN RESUSCITATION
COUNCIL GUIDLINES

Background

- Survival to hospital discharge presently approximately 5-10%
- Bystander CPR is a vital intervention before arrival of emergency services
- Early resuscitation and prompt defibrillation (within 1-2 minutes) can result in >60% survival

Chain Of Survival



Normally: it is ABC
 → when pt is not breathing & doesn't have pulse then the priority becomes C → A → B
 ↳ this first because there is oxygen reserve in blood

~> This isn't applied in paediatrics because in ped the most common cause for arrest is hypoxia so the priority is ABC.

C-A-B



BLS for Healthcare Providers Quick Reference

C-A-B (Not A-B-C)



**Chest
Compressions**



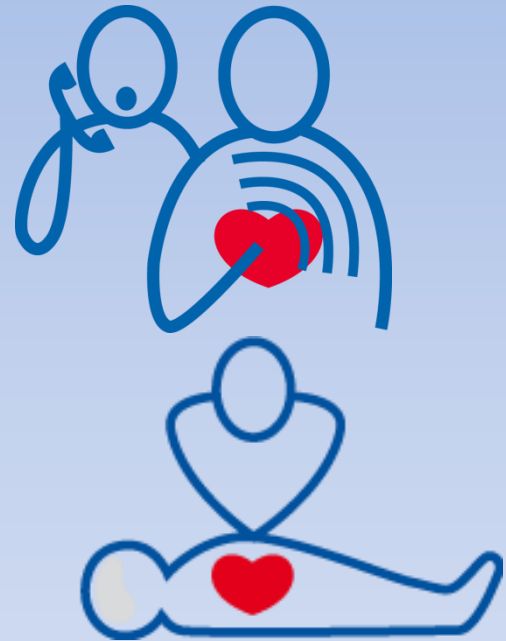
Airway



Breathing

The three SSS's: safety, shake, shout

- **Safety : Approach safely**
- **Shake : Check response**
- **Shout for help**
- **30 chest compressions**
- **2 rescue breaths**



Approach Safely!

Scene

Rescuer

Victim

Bystanders

Check Response and Breathing



Call For Help



Check Carotid Pulses



Start a High-Quality CPR

→ interlock fingers + straighten your arm

- Start compression within 10 seconds of recognition of cardiac arrest .
- Push Hard, Push Fast. *2 min → 5 times (30 compression → 2 breaths)*
- Allow complete chest recoil
- Minimize interruption .
- Give effective breaths that make the chest rise.
- Avoid excessive ventilation .

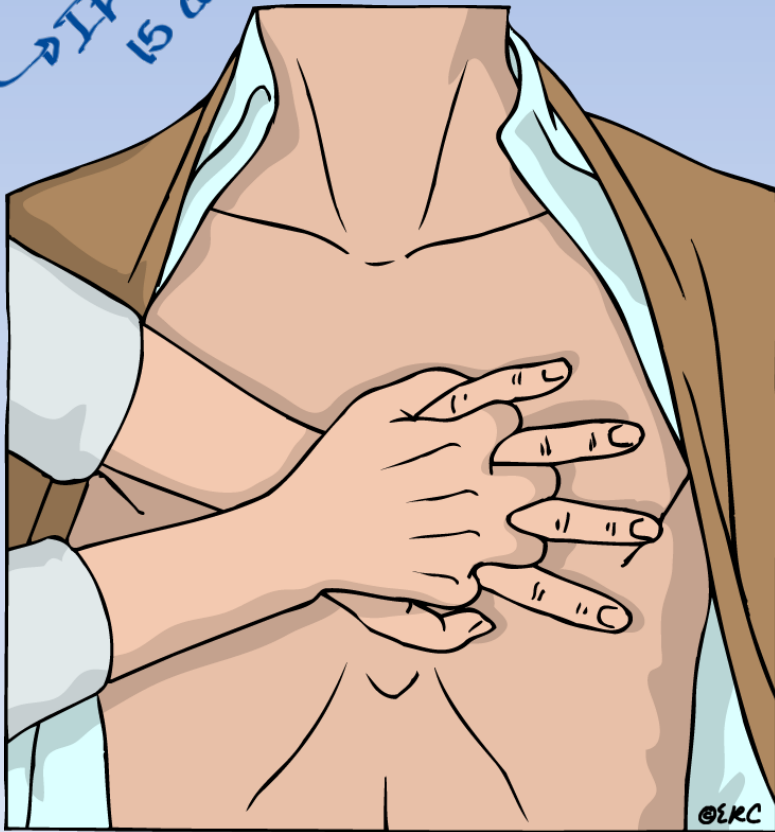
*then switch
less than 10 seconds
to check pulse + rhythm*

30 Chest Compressions



Chest Compressions

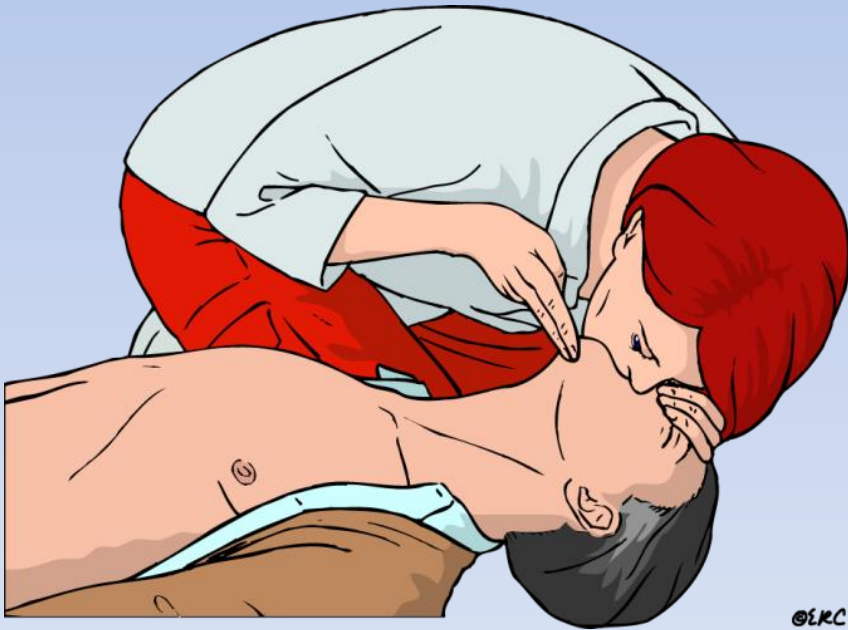
In ped:
2 scenarios:
→ if you are alone then
continue as with adult
→ If you are with team
15 compressions
of 2 breaths



- Place the heel of one hand in the centre of the chest
- Place other hand on top
- Interlock fingers
- Compress the chest
 - Rate 100 min^{-1} (100-120)
 - Depth 5-6 cm
 - Equal compression : relaxation
- When possible change CPR operator every 2 min

* When A&S tube is inserted you do 100-120 compression/min with no interruptions

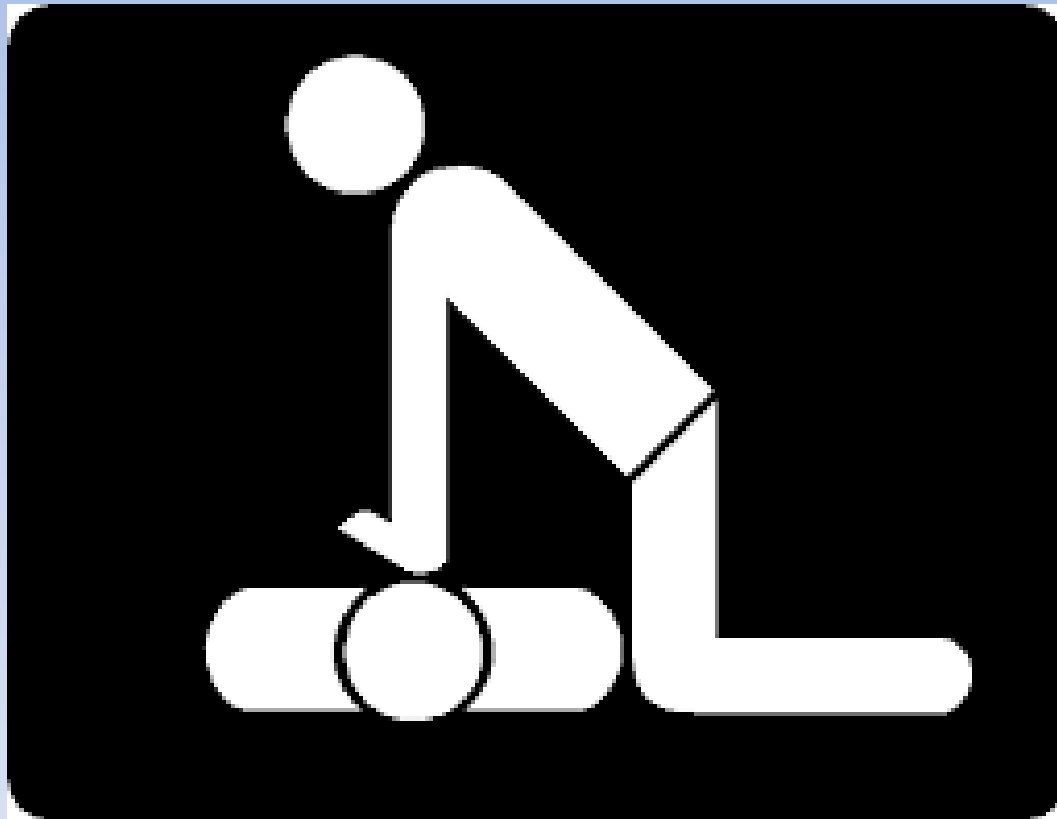
2 Rescue Breaths

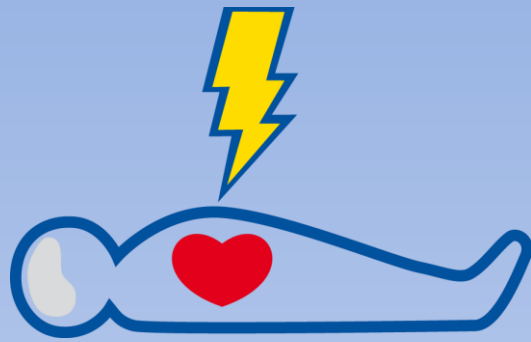


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Continue CPR for 2 min





Defibrillation

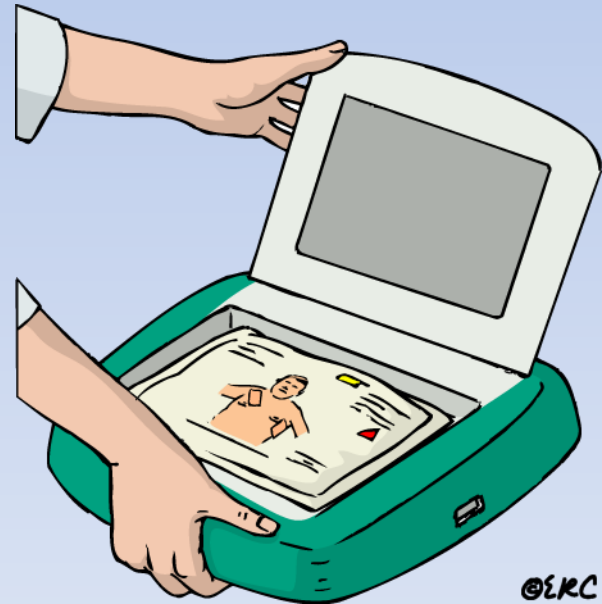
Attach AED



Follow voice prompts

Switch on AED

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

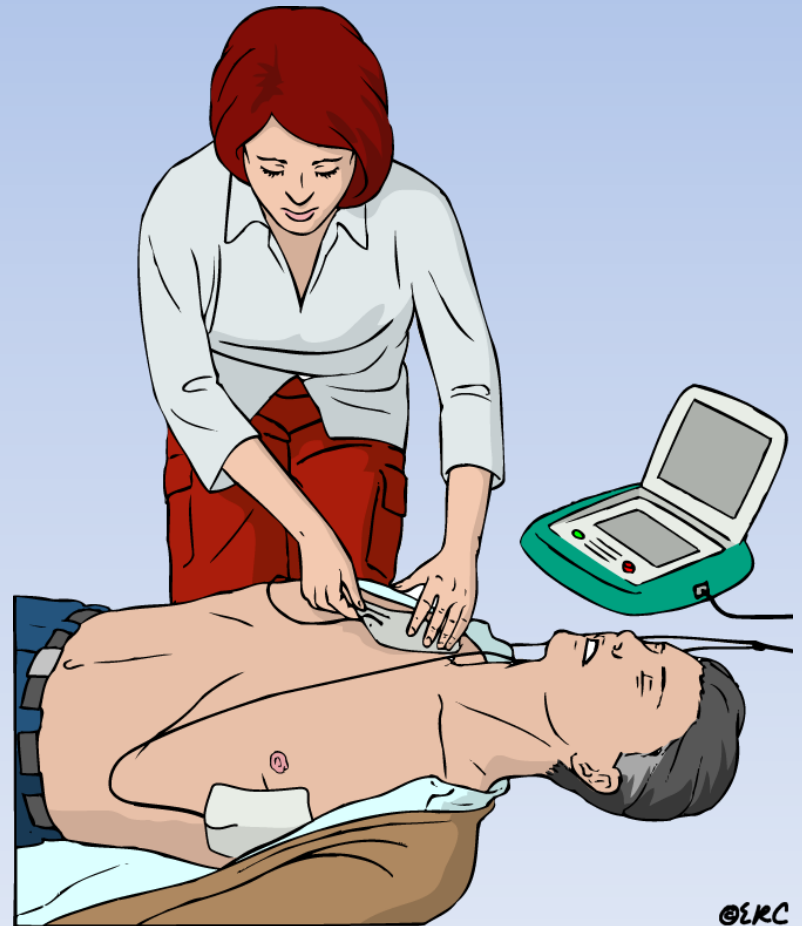


Attach Pads to Victim's Bare Chest

If you are Not alone don't stop CPR!

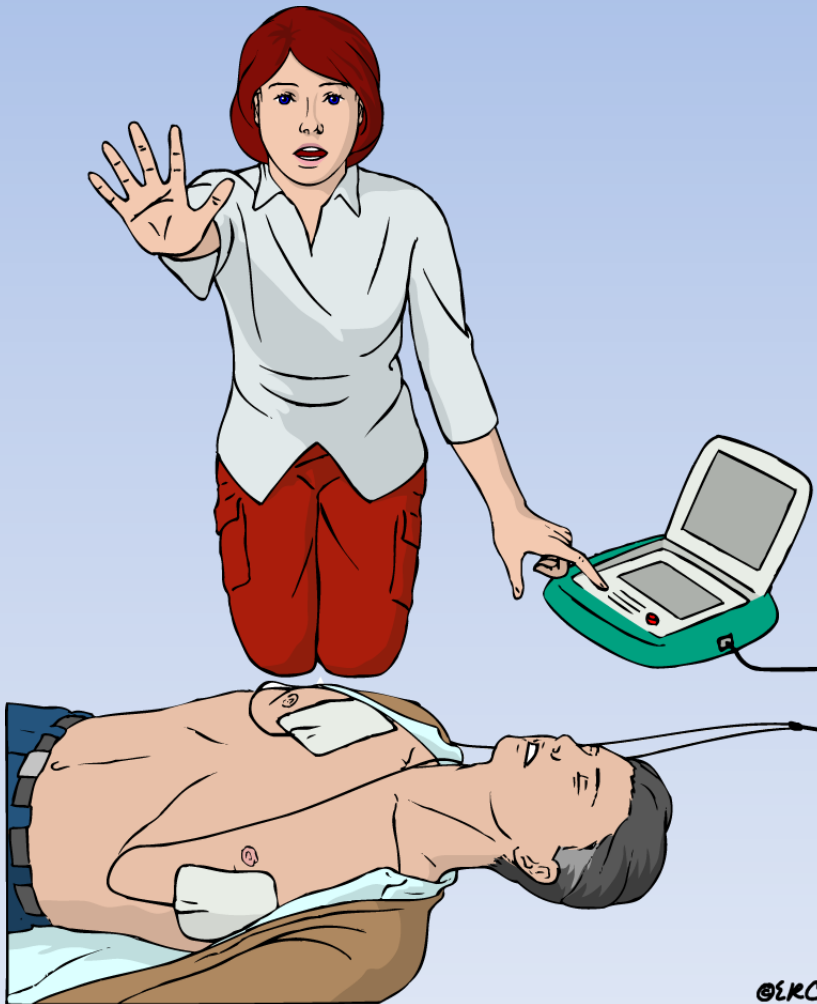


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Shock Indicated

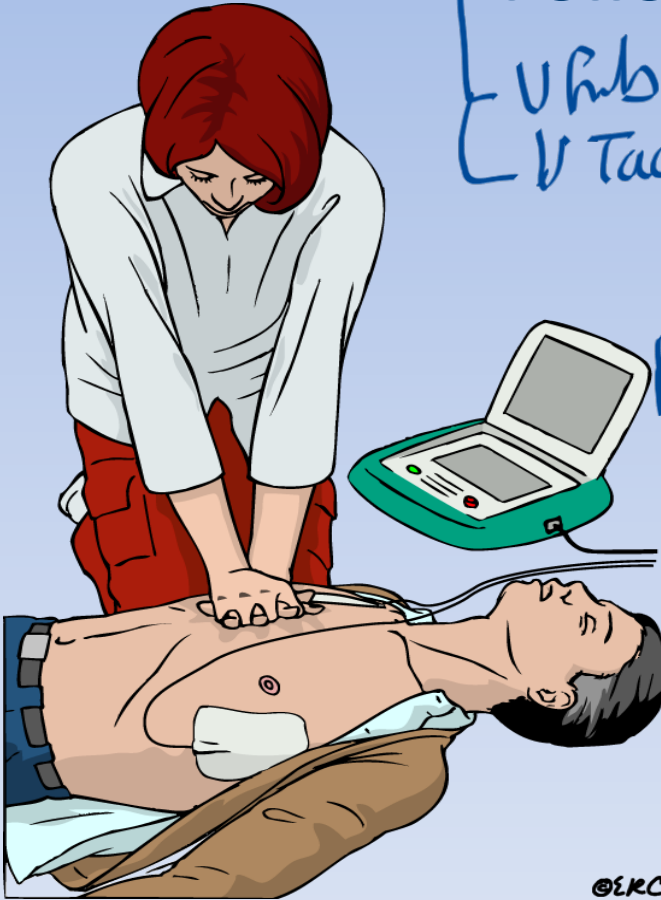


- Stand Clear
- Deliver Shock

↓
Unsyncronized A

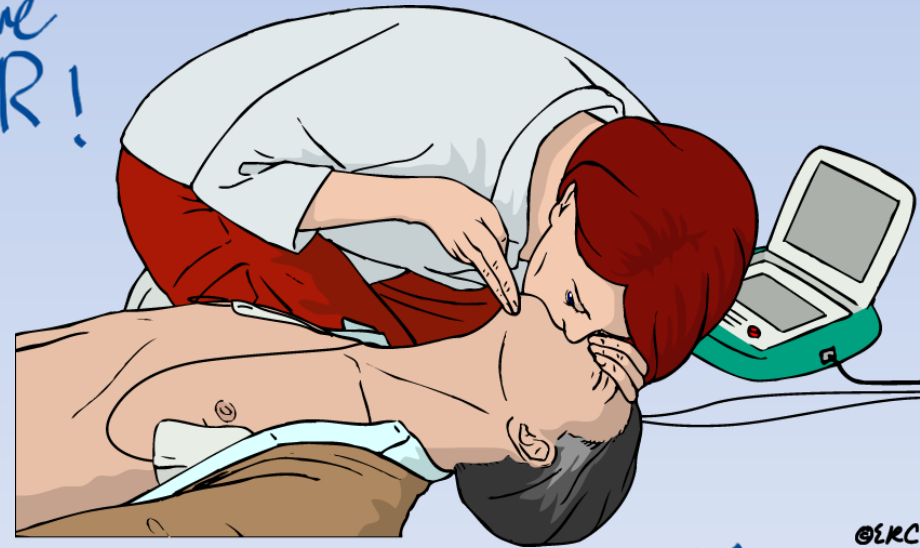
Shock Delivered OR No Shock Advised Follow AED Instructions

VFib
VTach pulseless
Asystole
Pulseless electrical activity



©ERC

30



©ERC

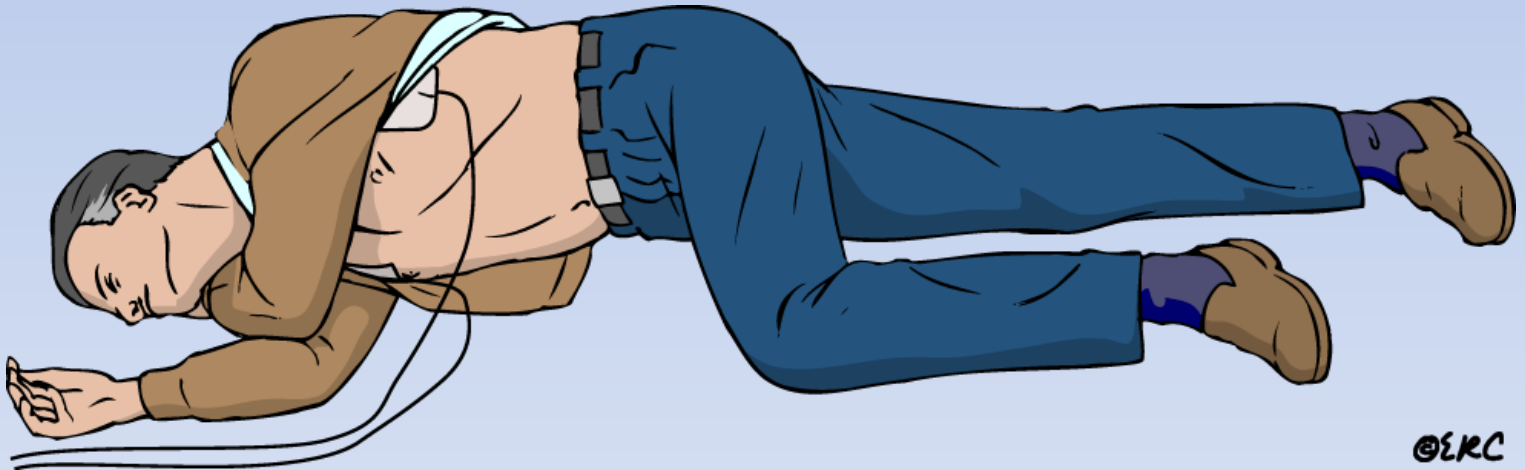
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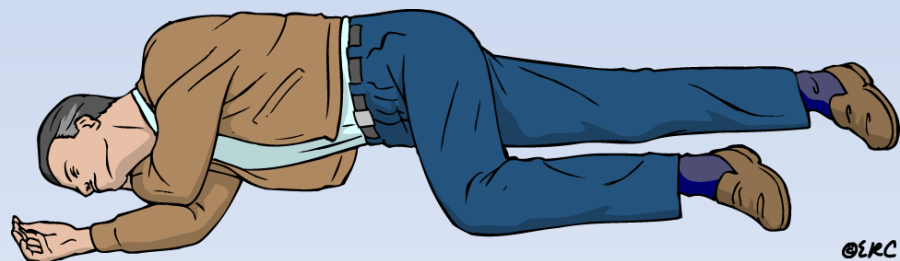
central pulses
carotid
femoral
subclavian
brachial in ped

Manual Defibrillation 150 J

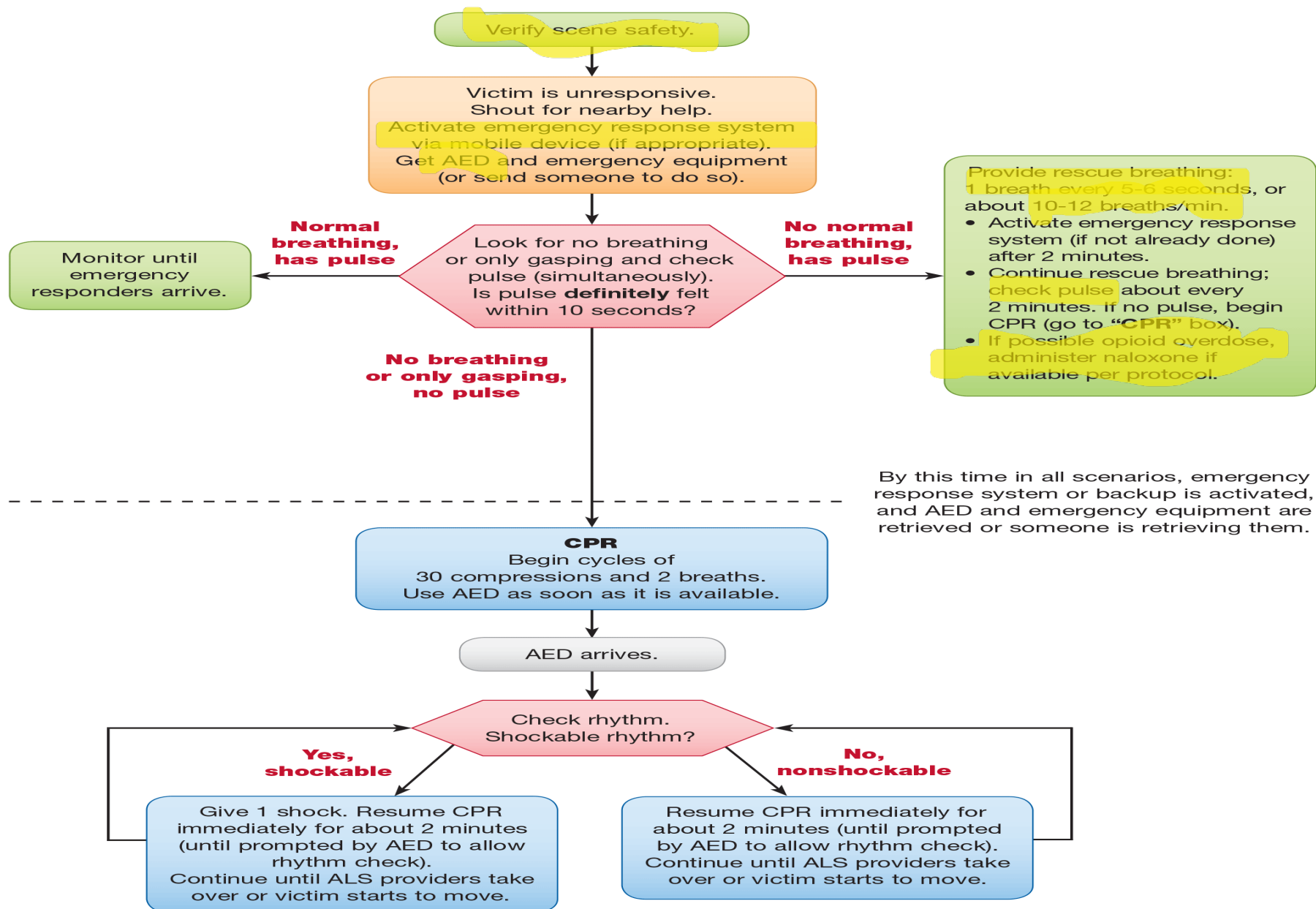


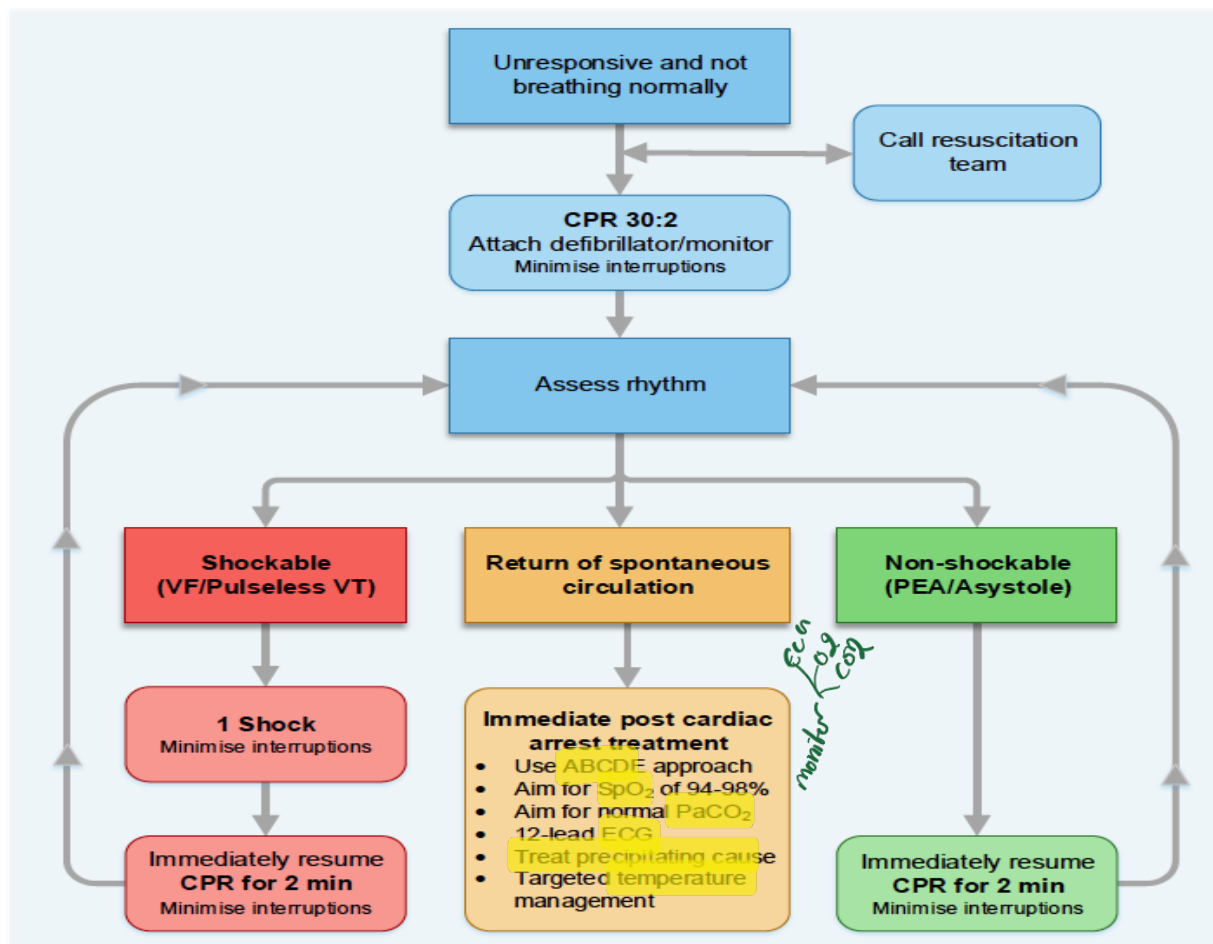
If the victim starts to breathe **NORMALLY**
place him in the Recovery Position





BLS Healthcare Provider Adult Cardiac Arrest Algorithm — 2015 Update



**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
- Hypovolaemia
- Hypo-/hyperkalaemia/metabolic
- Hypothermia → 90 - 120 min
- Thrombosis - coronary or pulmonary
- Tension pneumothorax
- Tamponade - cardiac
- Toxins → 90 - 120 min

Consider

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

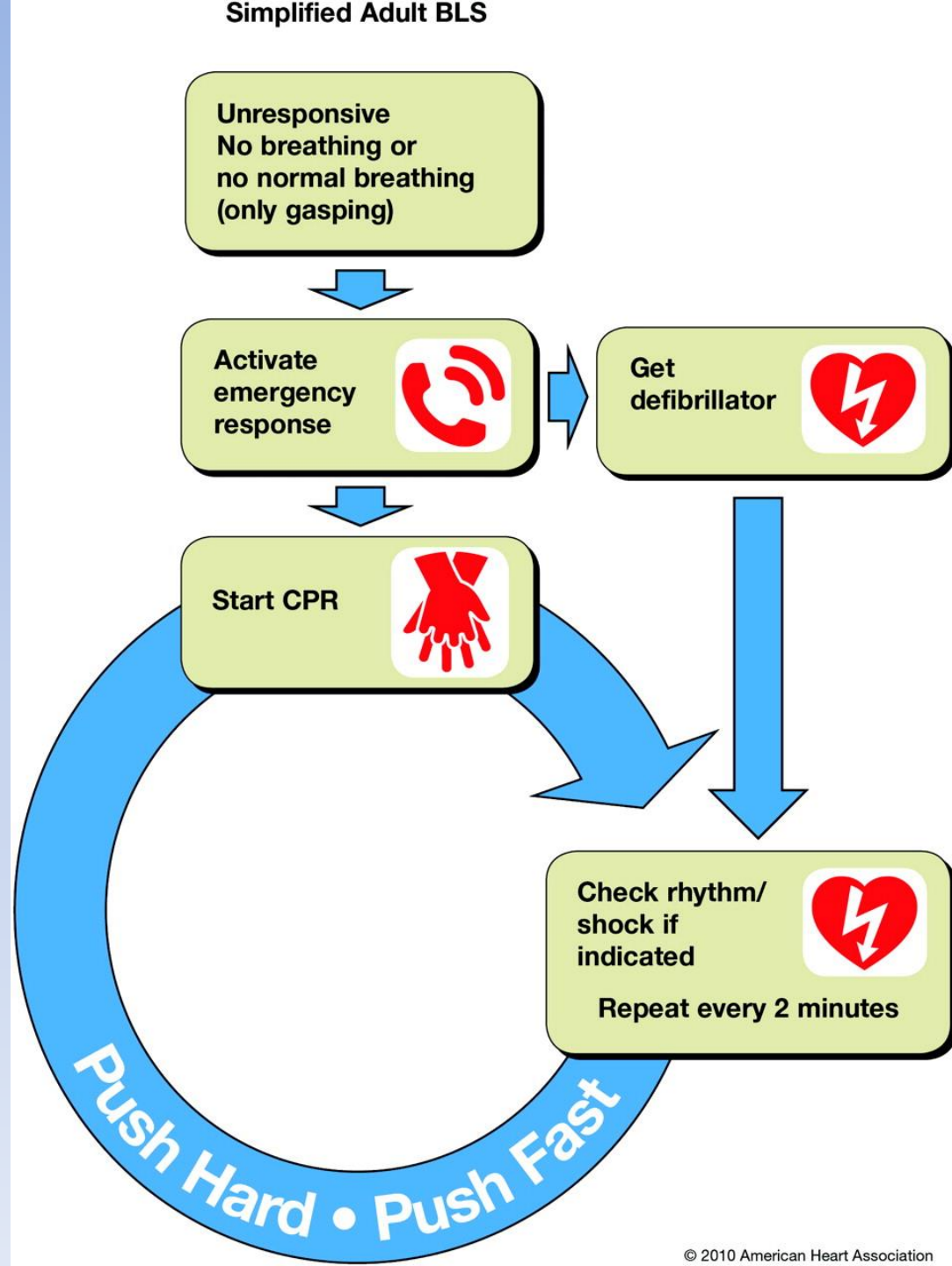
after 20 min

others usually we stop after 20 min

Questions



Summary



Pic about cardiac arrest heart rhythm summary

2 Drugs used in CPR: given in both shockable & non shockable

1. Adrenaline → helps in PPR & cardiac outcome

2 shocks

First: as soon as IV access is accessible

second: after 3 cycles

Dose: 1 mg

given every other cycle or every 4 min

2. Amiodarone (Antiarrhythmic) → 2 Doses

300mg

150mg

{ given after 3 shocks given 300mg then 150mg after 5 shocks.

→ works as chemical cardioversion