

Airway + Breathing disorders

CPR with AED

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BLS algorithm

- **D**anger
- **R**esponse = consciousness (AVPU scale)
- **S**hout / Send for help

- **A**irway = open it

- **B**reathing

- **C**irculation

Primary Survey = 20s



Choking Conscious Adult

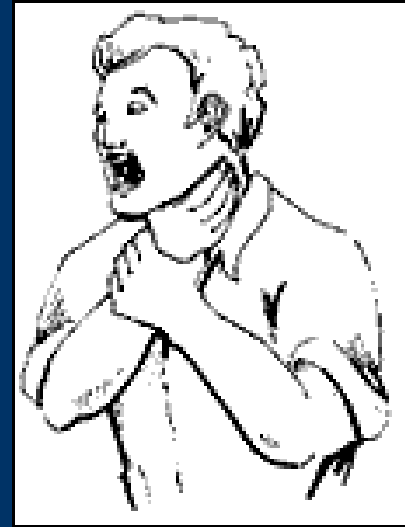
- uncommon but potentially treatable
- less than 1% of these incidents are fatal

- mostly witnessed

- food partitions
- trauma / burns
- edema = swelling



Choking



Sings:

- clutch throat or mouth
 - cough, gurgle, vomiting sound, wheezing
 - inability to speak
 - heavy breathing
 - anxiety
-
- turns blue (cyanosis) from lack of oxygen
 - if breathing is not restored, the victim falls into unconsciousness
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Inability to relieve the obstruction can cause:

- Breathing failure
- Brain damage
- Death

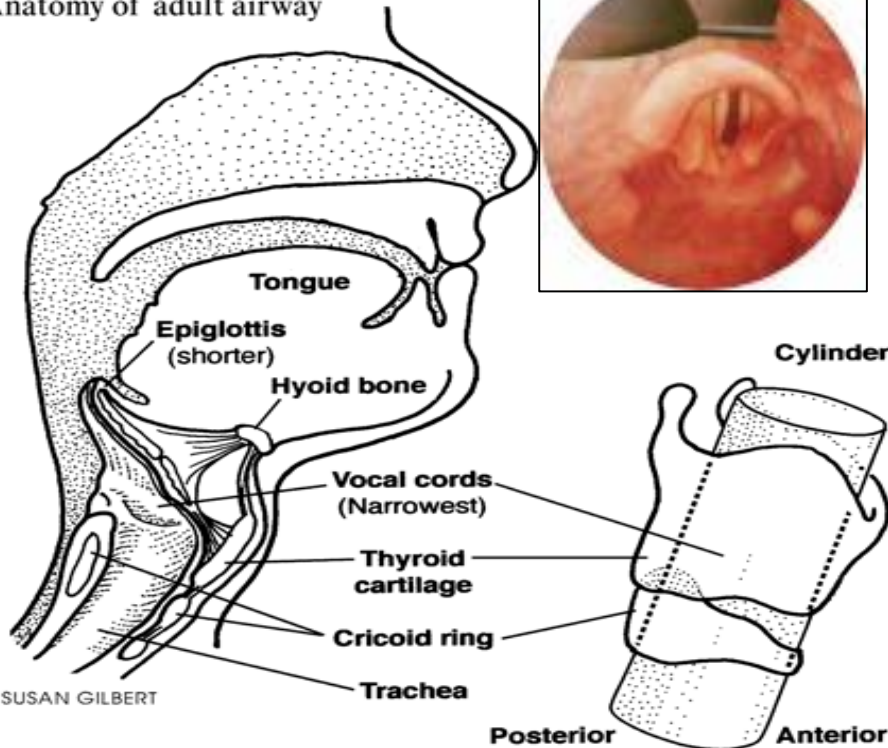


Narrowest part of airway:

Adult: glottis

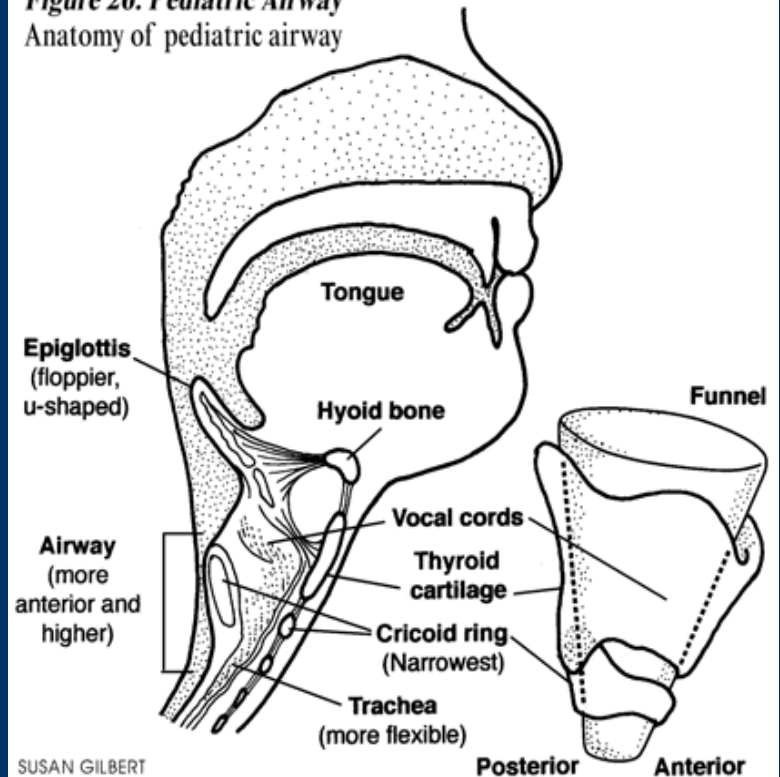
Child: subglottic space

Figure 27: Adult Airway
Anatomy of adult airway



SUSAN GILBERT

Figure 26: Pediatric Airway
Anatomy of pediatric airway



SUSAN GILBERT

Foreign Body Airway Obstruction

- relief FBAO = life saving procedure
- safe, effective, simple

- Cough and bend forwards
- 5 Back blows / slaps
- 5 Abdominal thrusts = (Heimlich maneuver)
- Chest thrusts

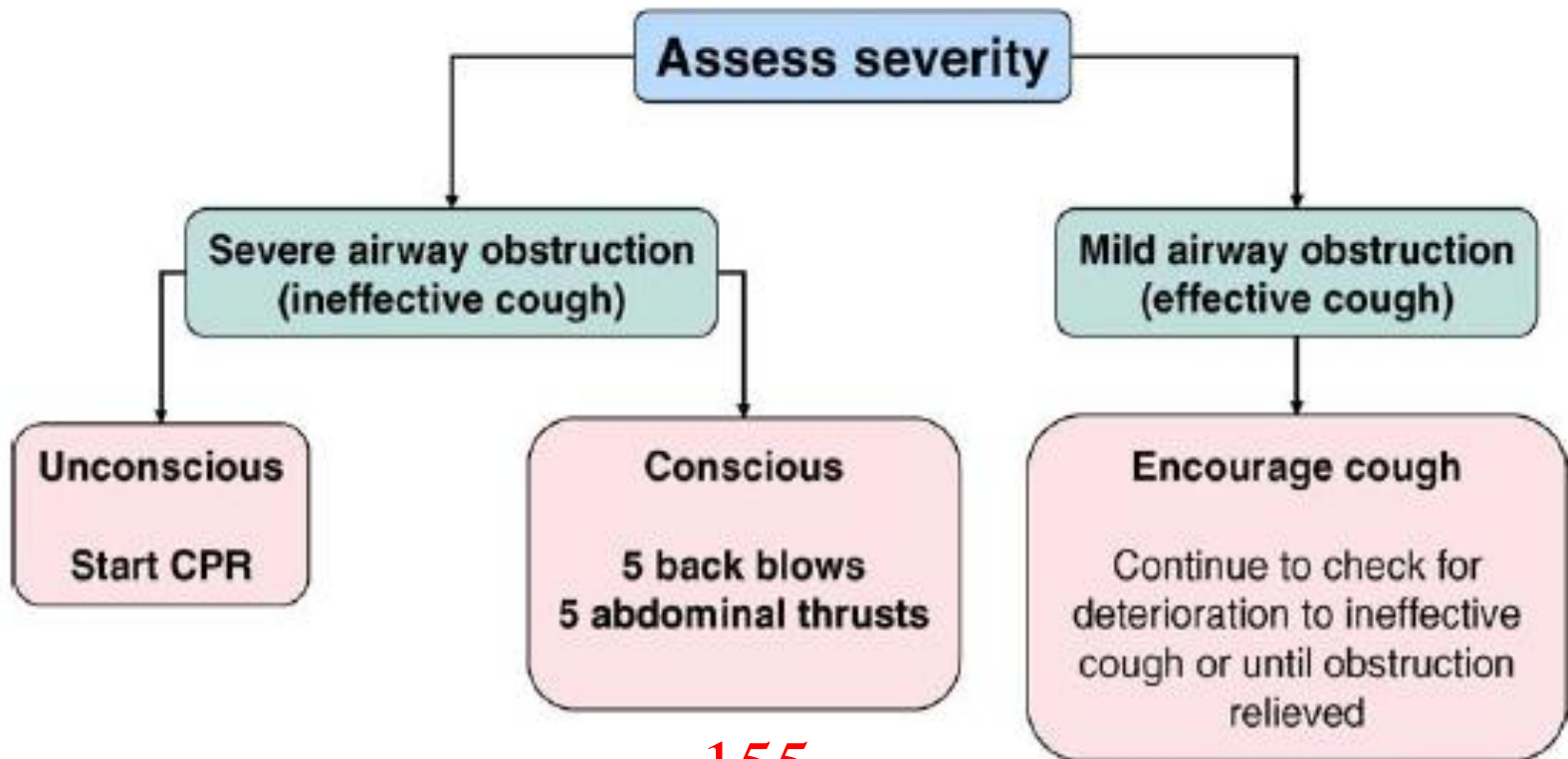
often you will need more than 1 procedure to clean the airway

Mild obstruction

- Coughing generates high and sustained airway pressures and may expel the foreign body.
- Aggressive treatment, (back blows, abdominal thrusts, chest compression), may cause potentially serious complications and could worsen the airway obstruction.
- Continuous observation until they
 - improve
 - severe airway obstruction may develop

First aid:

Adult FBAO Treatment



Back blows

- Stand to the side and slightly behind the victim.
 - Support the chest with one hand and lean the victim well **forwards** so that when the obstructing object is dislodged it comes out of the mouth rather than goes further down the airway.
 - Give up to five sharp blows between the shoulder blades with the heel of your other hand.
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Back blows



Heimlich man. = abdominal thrust



Increase pressure
below foreign body

- Stand behind the victim and put both arms round the upper part of his abdomen.
- Lean the victim forwards.
- Clench your fist and place it between the umbilicus and xiphisternum.
- Grasp this hand with your other hand and pull sharply inwards and upwards.
- Repeat up to five times





Chest thrust

- markedly obese persons
- late stages of pregnancy



Increase pressure
under foreign body

Following successful treatment:

Victims with a persistent cough, difficulty swallowing or the sensation of an object being still stuck in the throat should be examined

- Abdominal thrusts can cause serious internal injuries
- All victims treated with abdominal thrusts should be examined for injury by a doctor

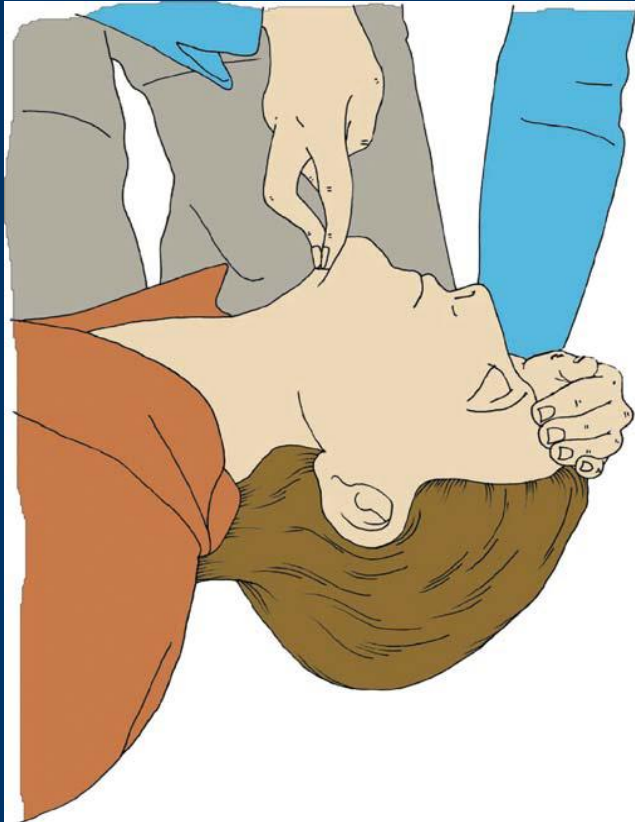
First Aid - Choking - Adult & Child

Clear airway if necessary during coma

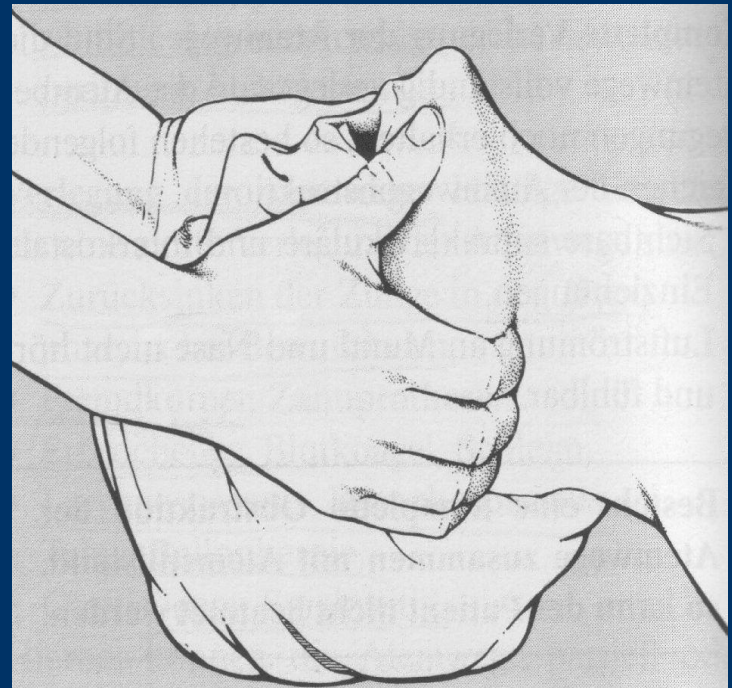
- with the casualty supported on the side, tilt the head backwards and slightly down.
 - Open the mouth and clear any foreign object. Only remove dentures if loose or broken.
 - Use your 2 fingers only - if you see solid material in the mouth
 - Do not push fingers where you can not see
-
-

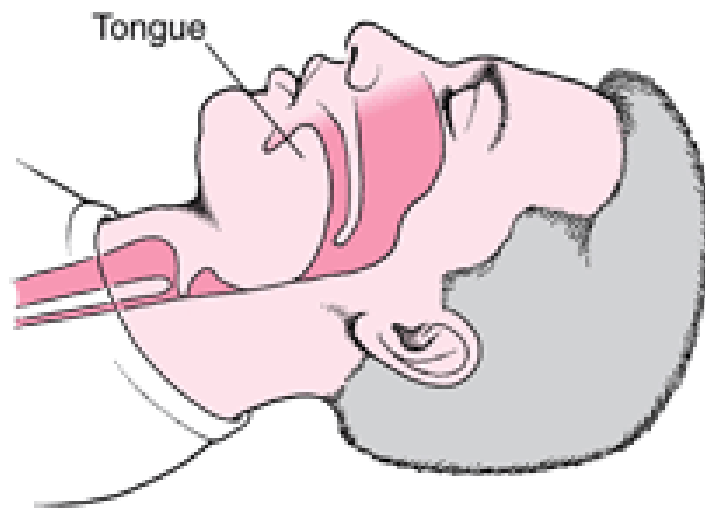
Keep airway open

head tilt, chin lift

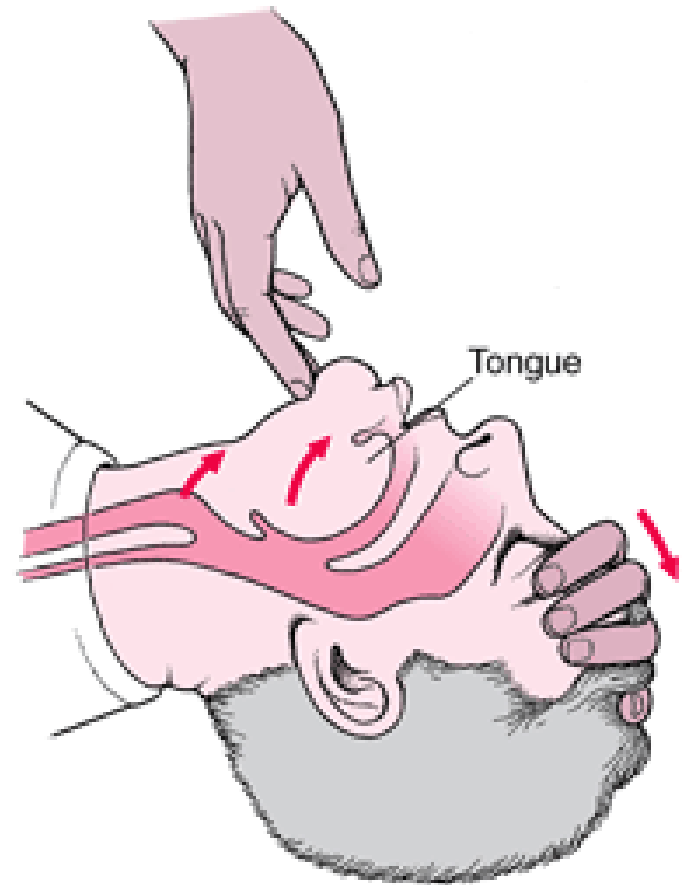


Esmarch maneuver
/ Jaw thrust





Blocked Airway



Open Airway

BLS – breathing with face-mask



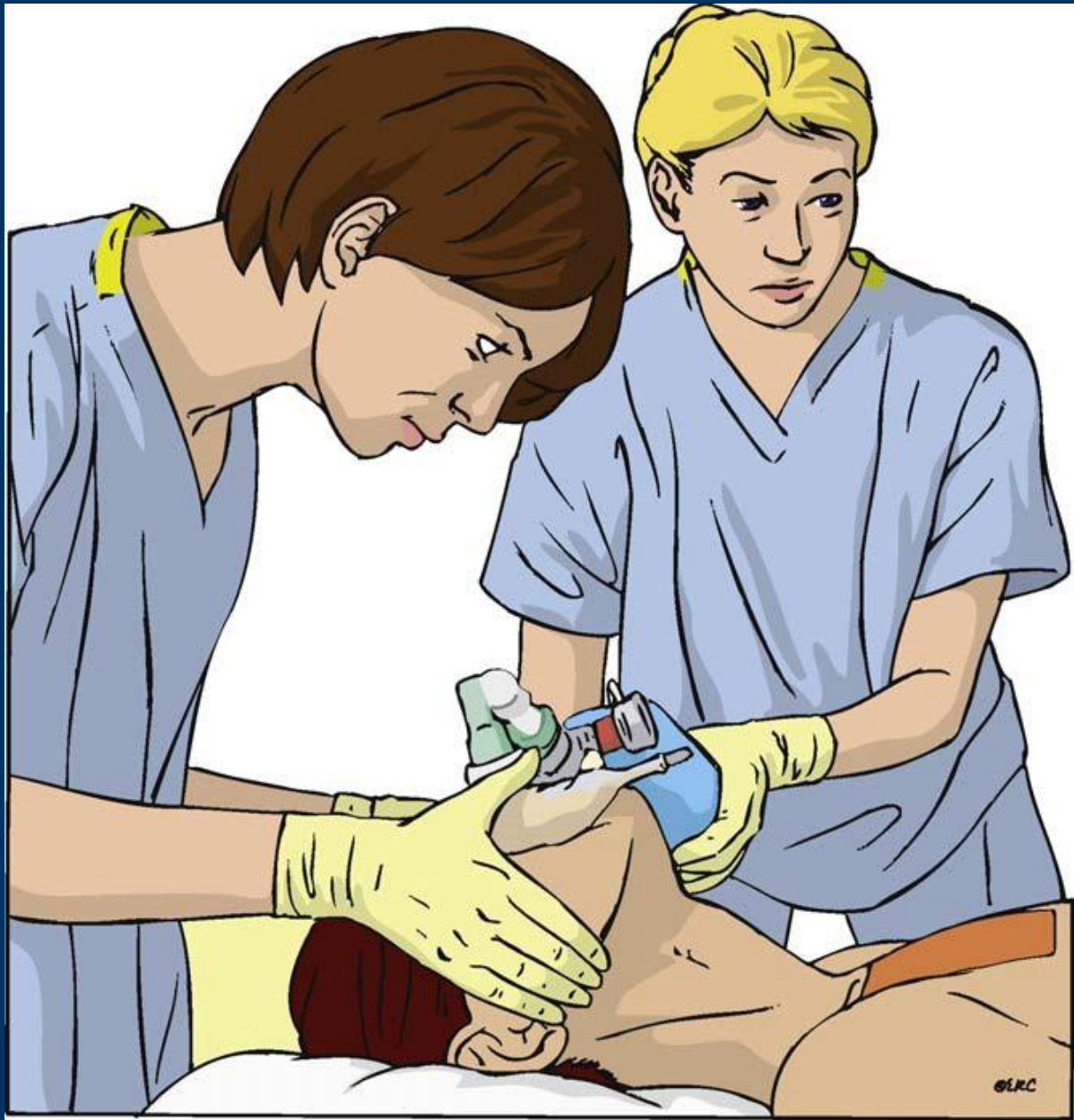
Face mask ventilation



Positive pressure ventilation by bag-valve mask

- correct volume = movement of chest
- Fr. 10/min
- 100% O₂
- 1 hand hold:
 - thumb + index f.
 - 3 ff. - chin
- 2 hands





Guedel airway

Oro-Pharyngeal Airway

I: unconsciousness
+ airway obstruction with tongue

Correct size OPA:

- distance angle of mouth --- ear

Risk in mild unconsciousness:

- vomitus + aspiration



Naso-Pharyngeal Airway (trumpet)

Correct size of NPA:

- distance nostril --- ear

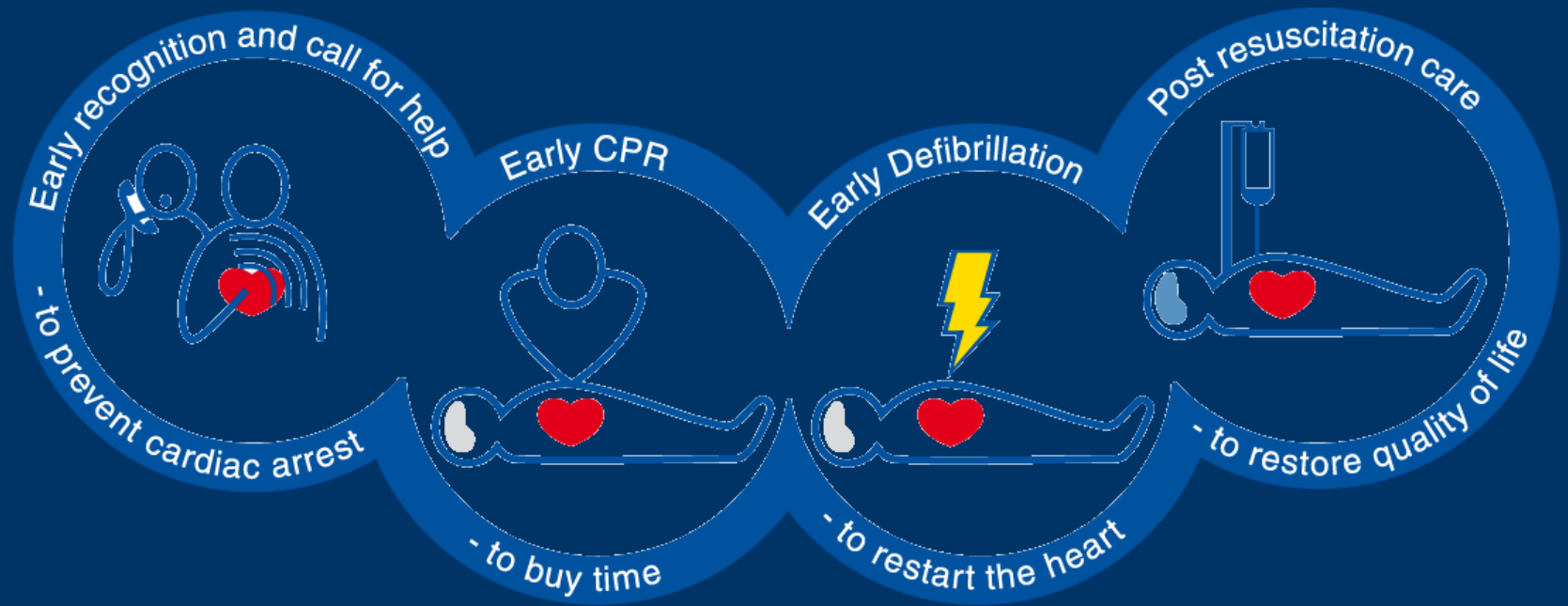
Risk:

- bleeding from nasal cavity

- Use of lubricant is essential



Chain of survival



European resuscitation council

Approximately 700,000 cardiac arrests per year in Europe

Survival to hospital discharge presently approximately 5-10%

Bystander CPR is vital intervention before arrival of emergency services

Early resuscitation and prompt defibrillation (within 5 minutes) can result in >50% survival



Automated External Defibrilator

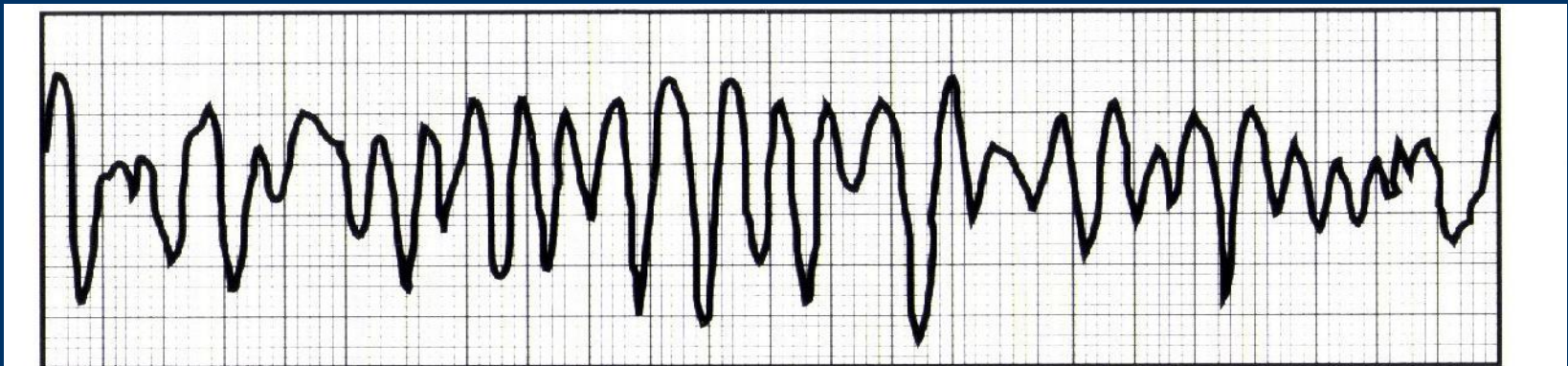


Ventricular fibrillation

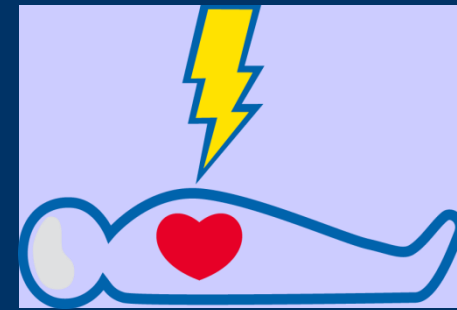
Most common cause of cardiac arrest in adults out of hospital

- caused by obstructed coronary artery in myocardial infarction

- electric shock is the only treatment



Defibrillation

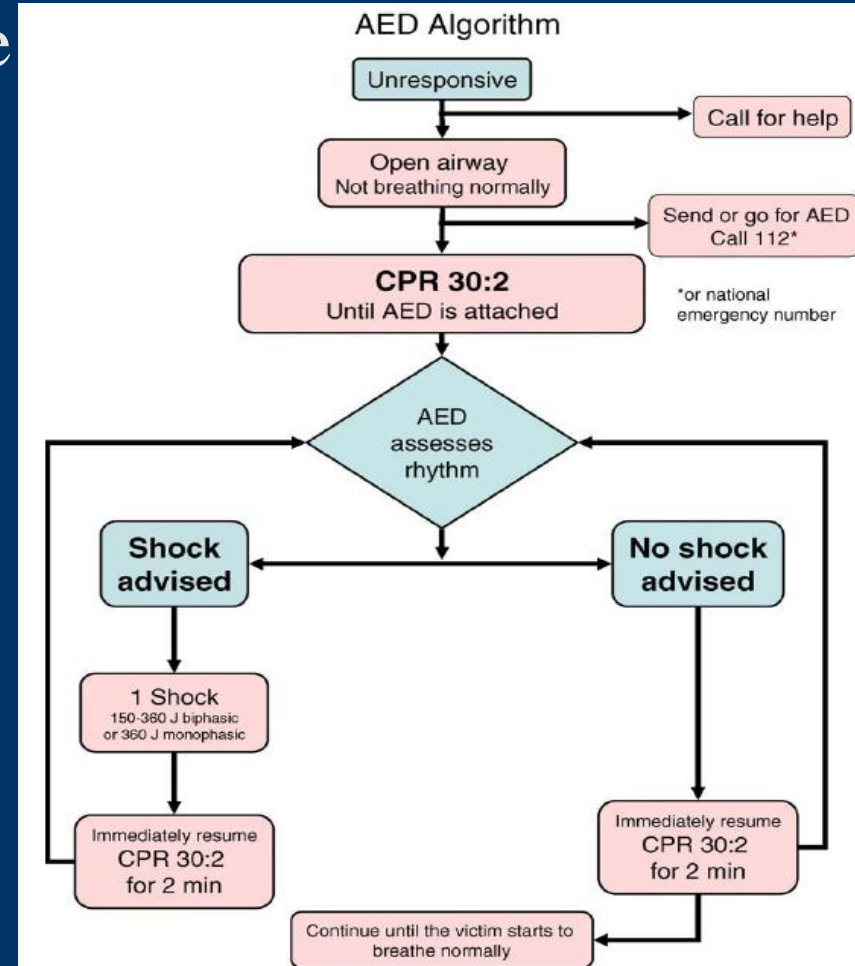


in Czech provided by ambulance services or lay persons

- continue with CPR

Attach AED

Follow voice prompts

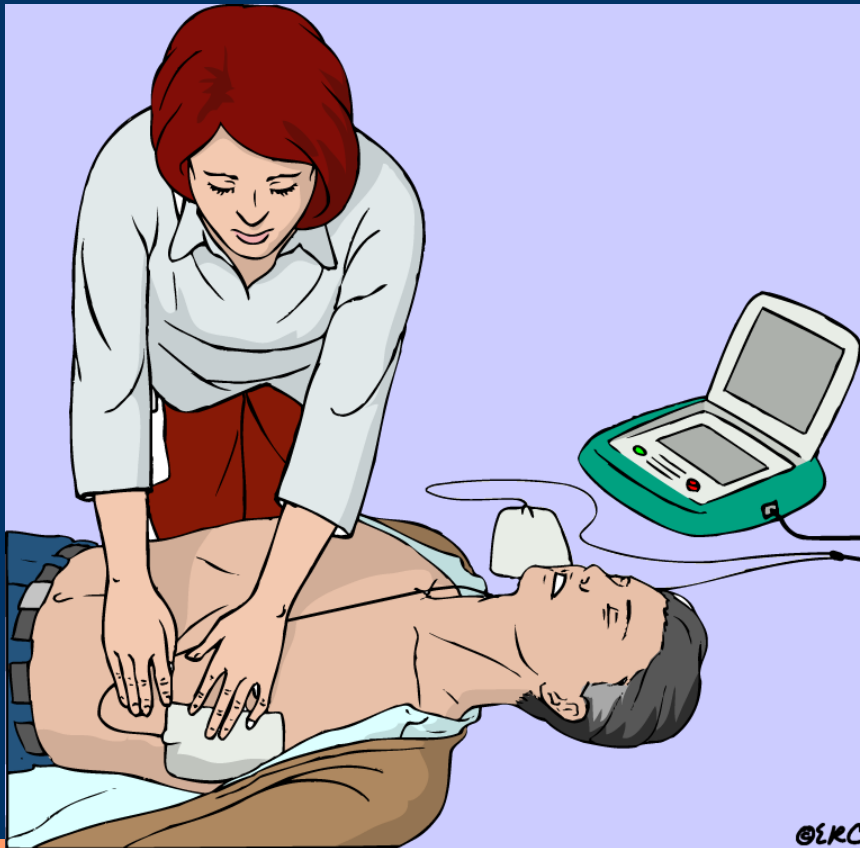


Start of AED

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



ATTACH PADS TO CASUALTY'S BARE CHEST



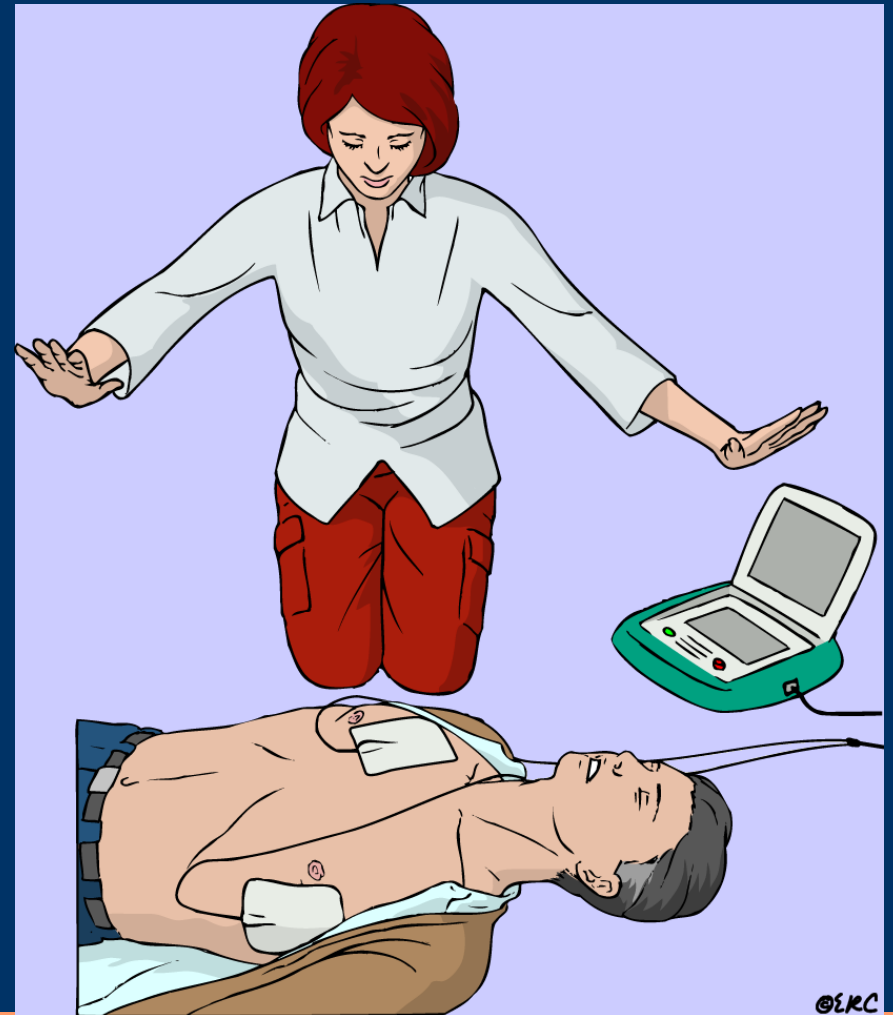
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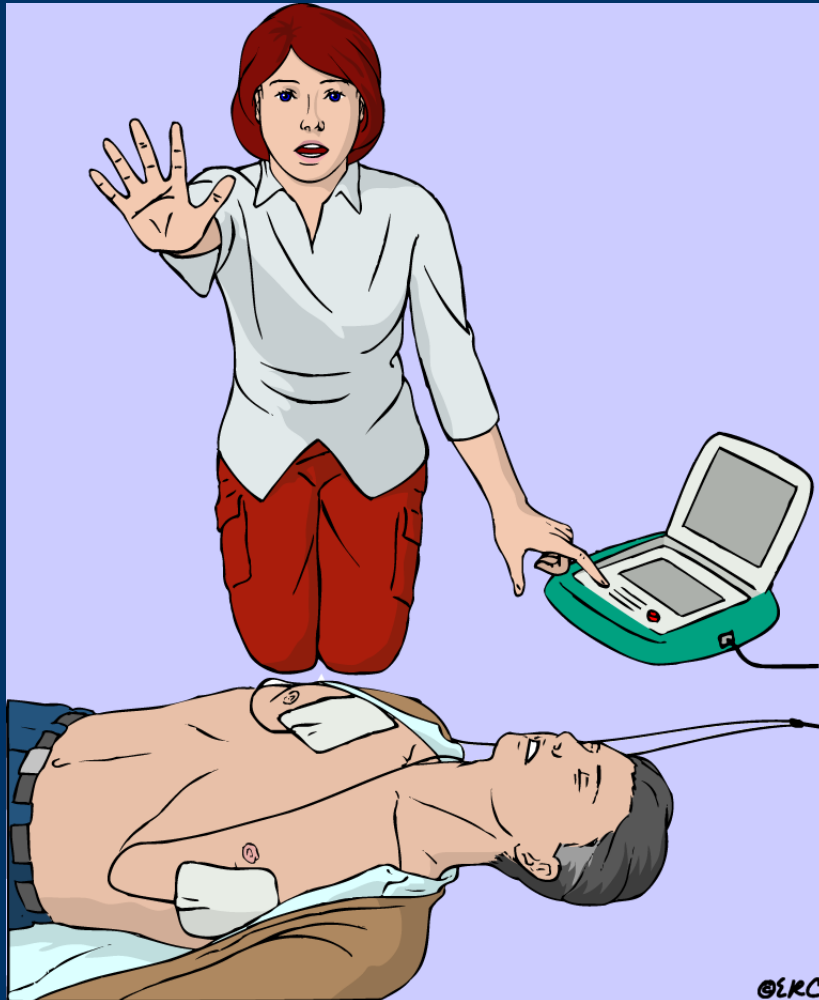
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ANALYSING RHYTHM

DO NOT TOUCH VICTIM



SHOCK INDICATED



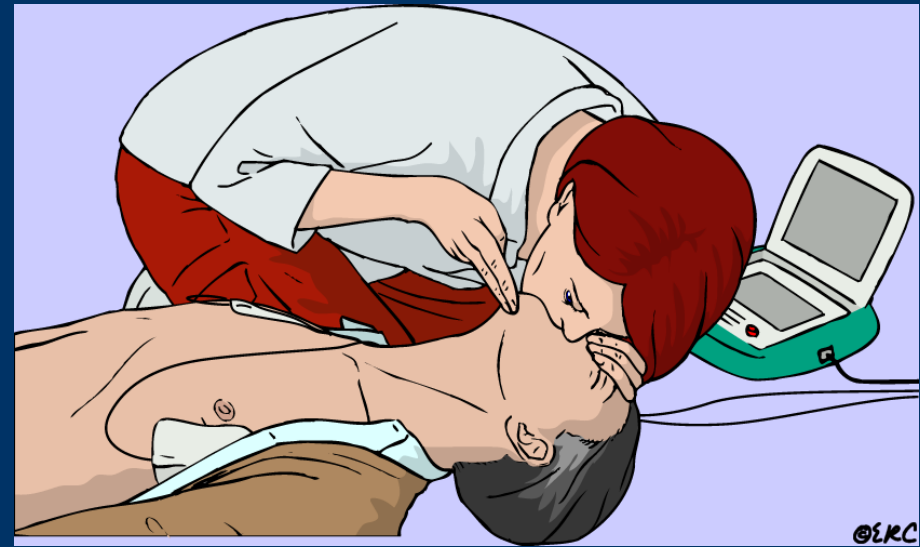
- Stand clear
- Deliver shock

SHOCK DELIVERED FOLLOW AED INSTRUCTIONS



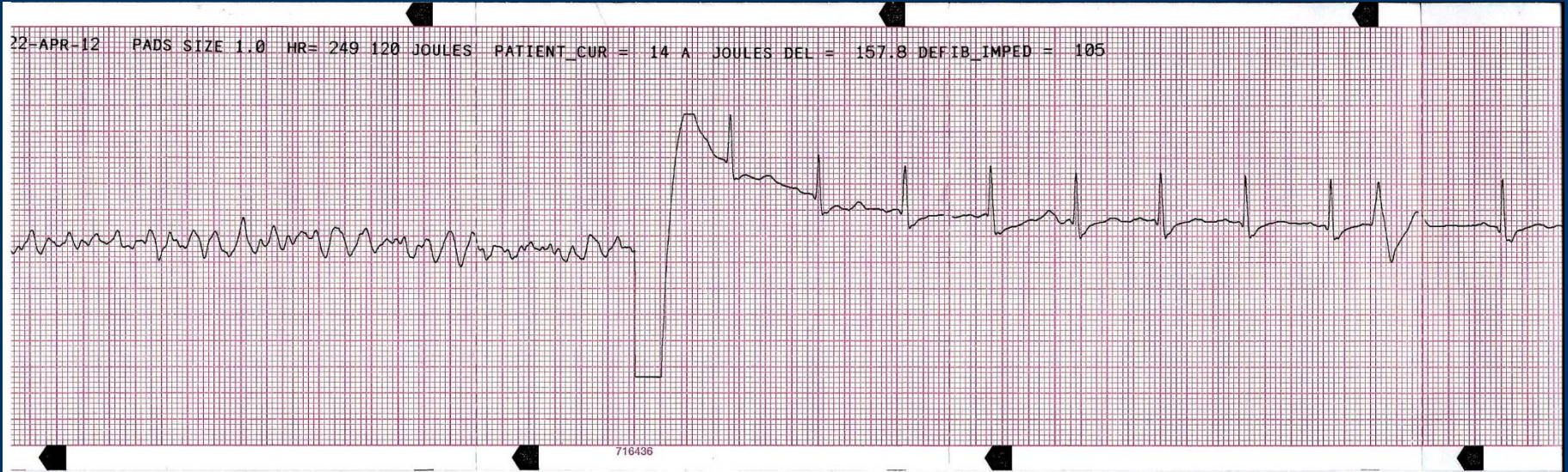
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Successful defibrillation



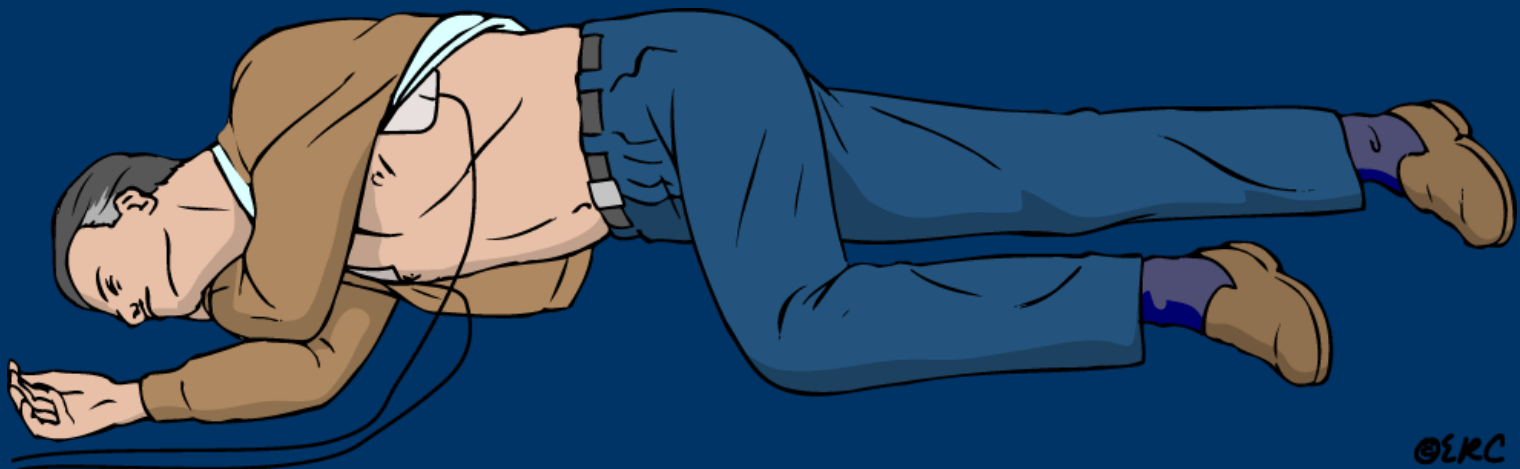
- could wake up if shock applied until 5 min
- starts to breath, cough

Victim could be turned to recovery position – monitor vital signs till ambulance come

Do not take the electrodes off !!

RECOVERY POSITION

- If the affected person begins to breathe normally, turn him / her sideways to the recovery position
- Always check for breathing
- Do not remove the electrodes



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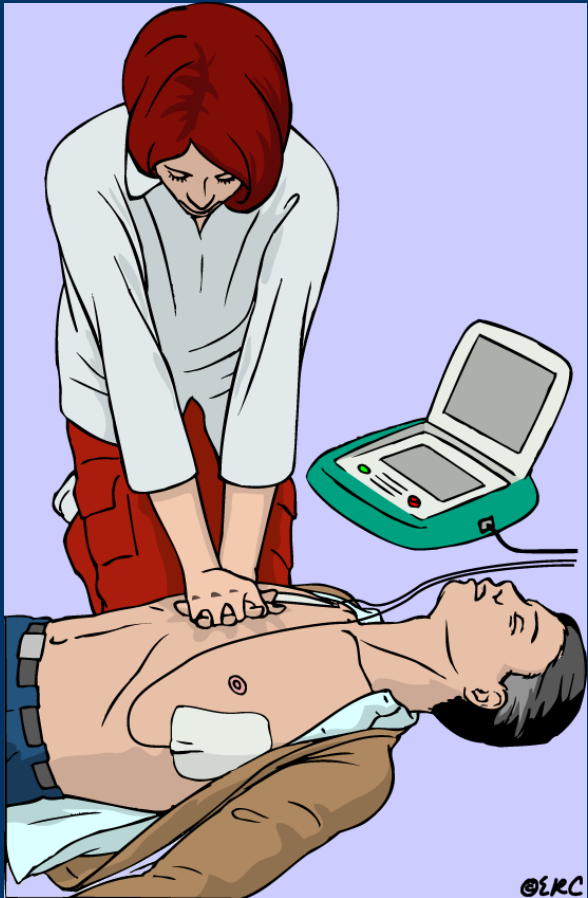
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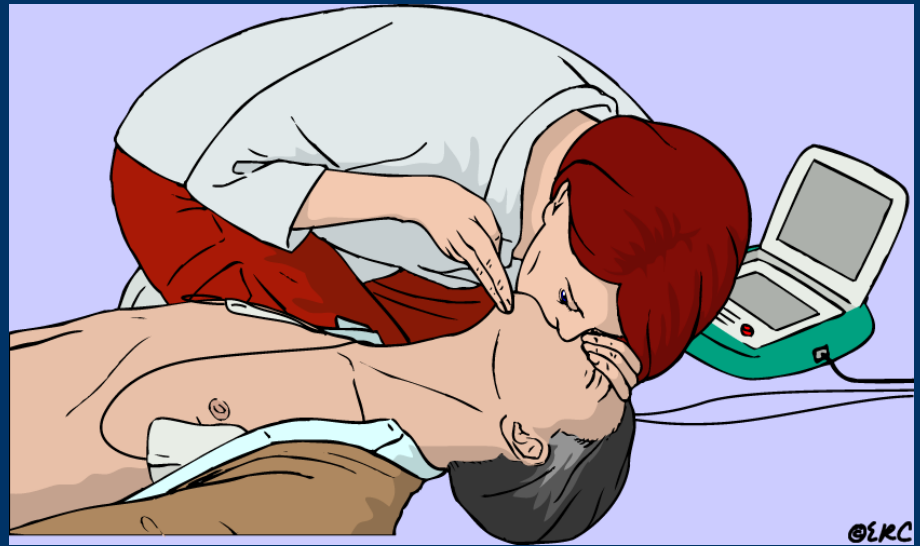


NO SHOCK ADVISED FOLLOW AED INSTRUCTIONS



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TACPR

Telephone Asisted CPR

No consciousness, No breathing ...

Next person call 155

.. Open the green box by code given by phone.

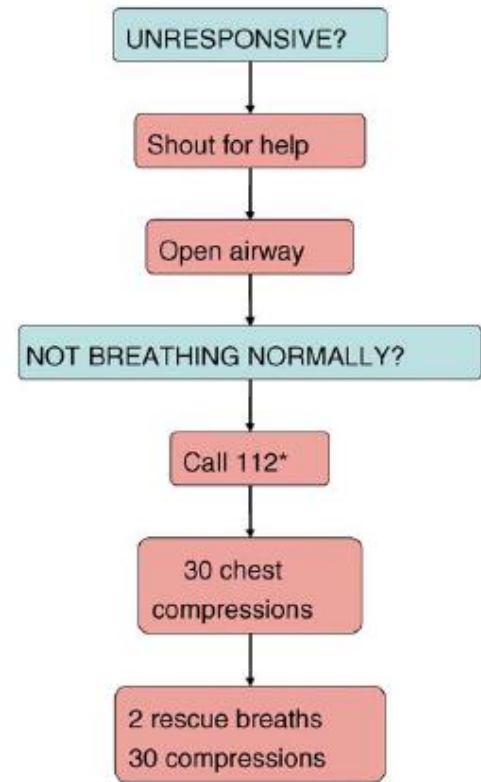
<http://www.fsps.muni.cz/aed/video/zelny-trh-dlouhe/>

Precordial thump

No more part of BLS !!
(ERC guidelines since 2005)

reserved :

- witnessed cardiac arrest when no defibrillator is immediately available
- if done in first 20s
25% regain cardiac function



Thanks for your attention

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