



**Safe Hands**  
Medical Emergencies  
& First Aid Training

# Medical Emergencies Training

# Welcome

[www.safe-handstraining.com](http://www.safe-handstraining.com)  
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# Objectives

To understand:

The importance of early recognition of the 'sick' patient

The causes and prevention of cardio respiratory arrest

The **AMPLE** history

The **ABCDE** assessment

The role of the healthcare professional

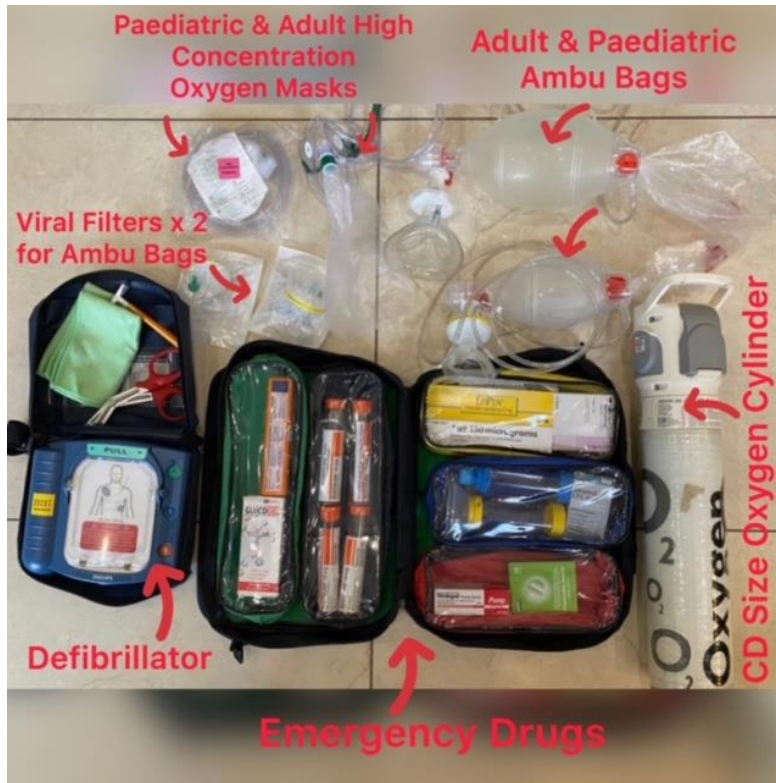
‘A patient could collapse on any premises at any time, whether they have received treatment or not. It is therefore essential that ALL registrants are trained in dealing with medical emergencies, *including resuscitation*, and possess up to date evidence of capability’.

## General Dental Council ‘Scope of Practice’ 2013

“embed human factors, avoid complacency like the plague!”

Sir Stephen Moss

# Medical Emergency Kit



# Patient Assessment Chart



## Patient Assessment & Management Chart

Safe Hands (copyright 2019)



1.	Patient Name:	Date:	Time:
<b>Patient History:</b> A – Allergies M – Medications P – Past Medical History L – Last Meal / Drink E – Event			
2.	Time:	Patient A, B, C, D & E Assessment (please tick ✓)	
Airway	Patient unable to maintain airway Patient unable to speak in full sentences	Lip/tongue swelling	Stridor (Inspiratory) Snoring/Gurgling
Breathing	Abnormal Resp Rate (<12 / >20)	Work of Breathing (laboured)	Wheeze (Expiratory)
Circulation	Colour – Pale, Ashen	Chest Pain/Tightness/ Heaviness/Crushing Sensation	CRT (>2 sec), Systolic BP <90mmHG
Disability	Check AVPU (Alert, Voice, Pain, Unresponsive)	Blood sugar (<4 mmol)	Posturing/Seizing
Exposure	Rash	Swelling/Bruising	Blood loss
3.	Signs & Symptoms NB. Not all may be present	Treatment Includes O2 @ 15lt PM +/- 999	Treatment Contraindications
A	Sudden onset, Lip / Tongue Swelling  Choking, Presence of Stridor, Unable to Cough / Talk	Adrenaline Autoinjector or Adrenalin 1:1000 (Hold in place for 10 secs): Over 12 yrs - 500 micrograms IM (0.5ml) 6 – 12 yrs - 300 micrograms IM (0.3ml) < 6 yrs - 150 micrograms IM (0.15 ml) < 6 months - 100-150 micrograms IM (0.1 – 0.15ml) Every 5 mins if required ----- 5 x Back slaps +/- 5 x Abdominal Thrusts	Ability to cough
B	Laboured Breathing, Expiratory wheeze ⊕ RR or ⊕ IR (moderate to severe)	Salbutamol 2-10 puffs through a spacer device (repeat every 10 – 20 minutes or when required)	
C	Chest Tightness/Heaviness/Crushing Sensation or pain which may radiate to Neck/Jaw, arm(s), Back or Epigastrium (Severe Indigestion) Sweating, Pallor Nausea/vomiting Breathlessness	Aspirin 300mg chewed or dispersed in a small amount of water  ----- GTN 2 puffs sublingual repeated in 5 mins if indicated and BP is stable	Allergy, Active Peptic Ulceration, Haemophilia, Bleeding Disorders, Previous Peptic Ulceration, Severe Cardiac Failure  ----- Hypotensive conditions i.e. ⊕BP / CRT > 2 secs, GTN in last 5 mins, Aortic Stenosis, Mitral Stenosis, Marked Anaemia, Raised ICP due to Head Trauma or Cerebral Haemorrhage,
D	Shaking/Trembling, Sweating Slurred speech, Vagueness Double vision, Confusion Unconsciousness Limb weakness  ----- Jerking movements of limb(s) Tongue biting, Sudden Collapse, Rigidity, Cyanosis	Sugary Drink / Hypostop Gel Buccally (if alert) Glucagon (if ⊕ level of consciousness) 0.5mg = < 8 yrs (Body Weight up to 25kg) 1mg = > 8 yrs (Body Weight 25kg >) Consider Recovery Position Think FAST test  ----- Support head/prevent further injury Seizure lasting > 5 mins give Buccal Midazolam 10mg > 10yrs 7.5mg 5 yrs - 9 yrs 5mg 1 yr - 4 yrs 2.5mg 3mnts - 11 mnts	Not Alert
E	Urticaria – associated with life threatening changes in A &/or B & / or C ----- Haemorrhage/Bleeding	Adrenaline Autoinjector or Adrenaline (doses as above) IM every 5 mins if required. ----- Apply direct pressure	
4.	Time:	CALL THE AMBULANCE SERVICE	

Completed by: \_\_\_\_\_ Profession: \_\_\_\_\_ Date: \_\_\_\_\_

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BNF: 2021. Medical Emergencies in Dental Practice. [ONLINE] Available at: <https://bnf.nice.org.uk/guidance/prescribing-in-dental-practice.html> [Accessed September 2021].

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# The AMPLE History



A

Allergies

M

Medications

P

Past Medical History

L

Last Ate/Drank

E

Event -

Signs (What you see)

Symptoms (What the patient tells you)

**A**

Airway

**B**

Breathing

**C**

Circulation

**D**

Disability

**E**

Exposure



## Remember



## Don't Diagnose

## Treat the Symptoms using ABCDE

- History
- Complete initial assessment
- Treat life-threatening problems
- Reassessment
- Call for help early

## Avoid Hypoxia at all costs:-

- Never lose the airway
- Never ignore noise in the airway
- Always monitor respiratory rate & ensure ventilation is maintained
- High flow O2 for all Medical Emergencies

# ABCDE – Approach Airway - treatment



Airway blocked by vomit.



# ABCDE Approach Airway – treatment



Airway blocked by the tongue.



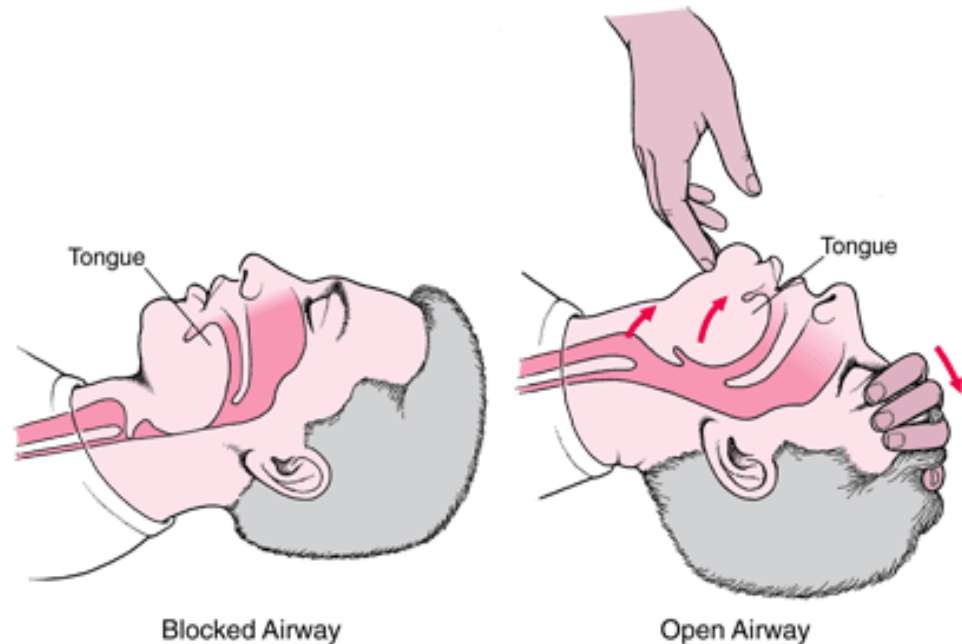
## ❖ Look for obstruction

Remove with:

- Two finger sweep
- Suction

## ❖ Airway opening

- Head tilt, chin lift
- Jaw Thrust



## ❖ Oxygen

- Can they speak in full sentences
- Noisy breathing - Stridor
- Is there any lip or tongue swelling

- Often happens whilst eating / drinking
- **Ask “are you choking?”**

### Mild choking:

- Can cough and answer your question

### Severe choking:

- Weakening cough
- Unable to speak – may ‘nod’ in response to your question.
- Struggling or unable to breathe.
- Distressed look on the face.
- Will become unconscious if untreated.

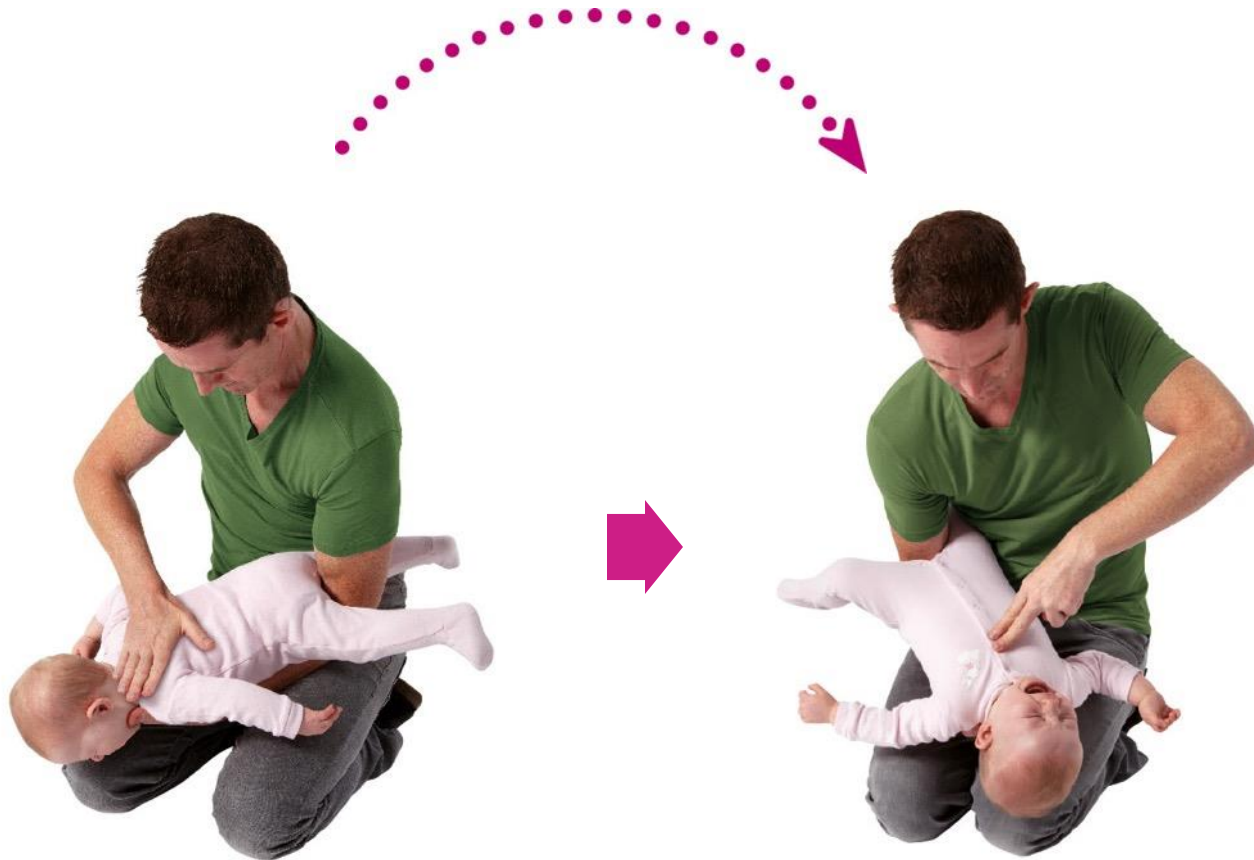




# ABCDE approach **Airway** - Choking adult or child > 1yr



# ABCDE approach **Airway** – assessment choking baby < 1 yr



**5 Back Blows**

**5 Chest Thrusts**

## Anaphylaxis has three main characteristics:

1. A rapid onset – the casualty usually becomes very ill, very quickly.
2. A life-threatening **Airway, Breathing** or **Circulation** problem *(or a combination of them)*.
3. A skin rash, flushing and/or swelling *(but not all casualties have this)*.



## **Airway** recognition:

- Swelling of the tongue, lips or throat. A feeling of the throat ‘closing up’.
- A hoarse voice or loud pitched, noisy breathing.

## **Breathing** recognition:

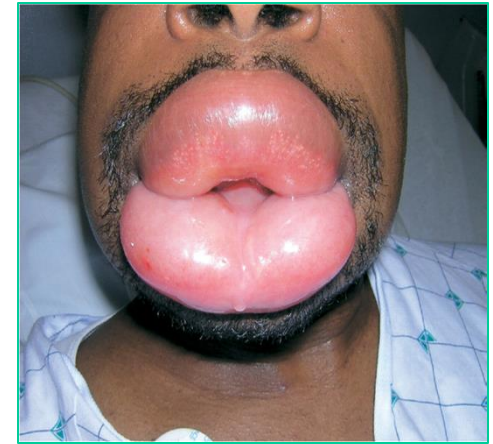
- Difficult, wheezy breathing or a ‘tight chest’.

## **Circulation** recognition:

- Dizziness, feeling faint or passing out, particularly if sat upright.
- Pale, cold, clammy skin and fast pulse.
- The rash may disappear.
- Nausea, vomiting, stomach cramps, diarrhoea.

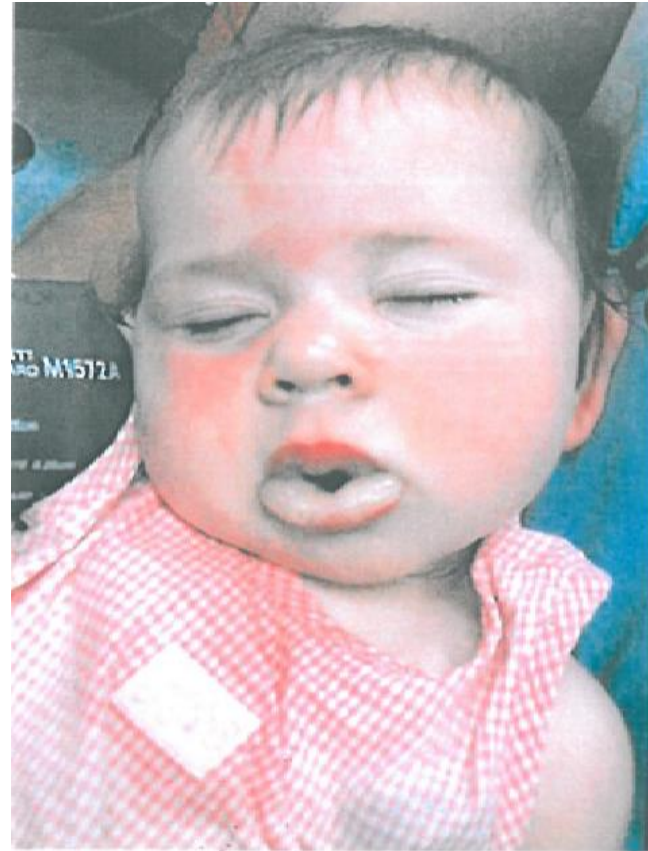


# ABCDE Approach - Anaphylaxis



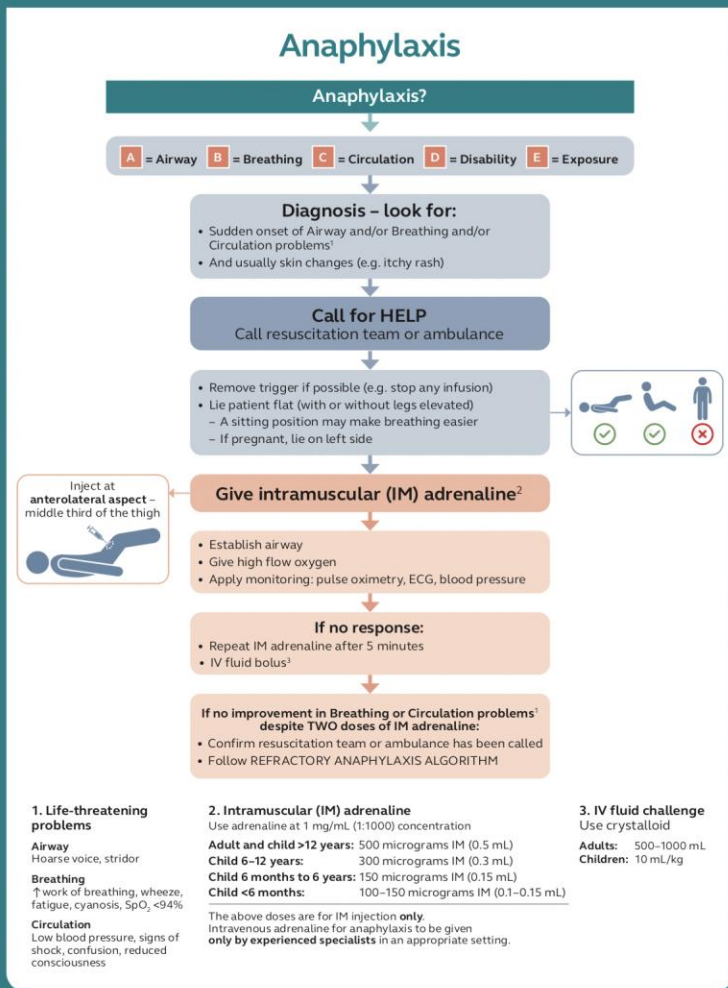


# ABCDE Approach - Anaphylaxis



## Skin Changes







- Adrenaline doses:-
  - Adult and child over 12yrs 500 micrograms IM (0.5ml)
  - Child 6yrs-12yrs 300 micrograms IM (0.3ml)
  - Child 6 months – 6yrs 150 micrograms (0.15ml)
  - Child < 6months 100 – 150 micrograms IM (0.1-0.15ml)
- Oxygen – High Flow, using a mask with an oxygen reservoir
- Ambulance – state ANAPHYLAXIS

**Repeat the IM adrenaline dose after 5 minutes if there is no improvement in the patient's condition continue to give IM adrenaline after every 5 minutes while life-threatening cardiovascular and respiratory features persist.**

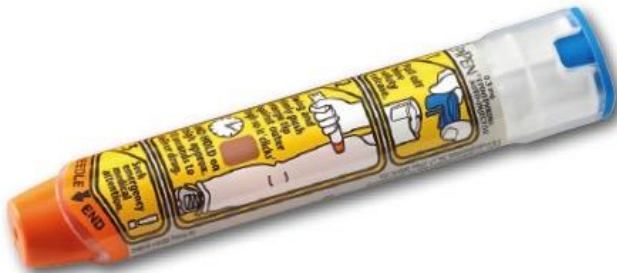
# ABCDE Approach Anaphylaxis – treatment



Jext:

150 micrograms

300 micrograms



Epipen:

150 micrograms

300 micrograms

## Equipment for drawing up adrenaline:-

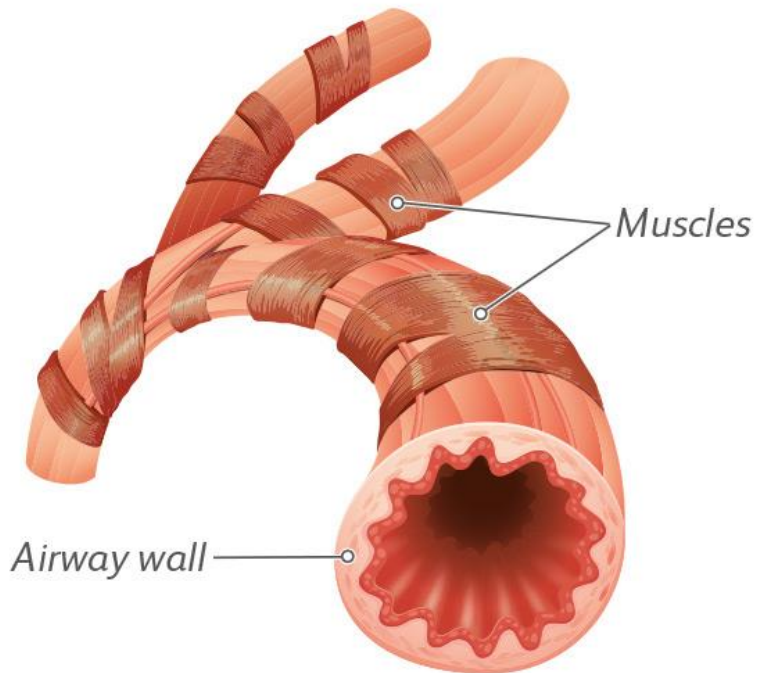
- 1ml syringe
- A 25mm needle is best and is suitable for all ages, in some adults a longer needle may be needed (38mm)



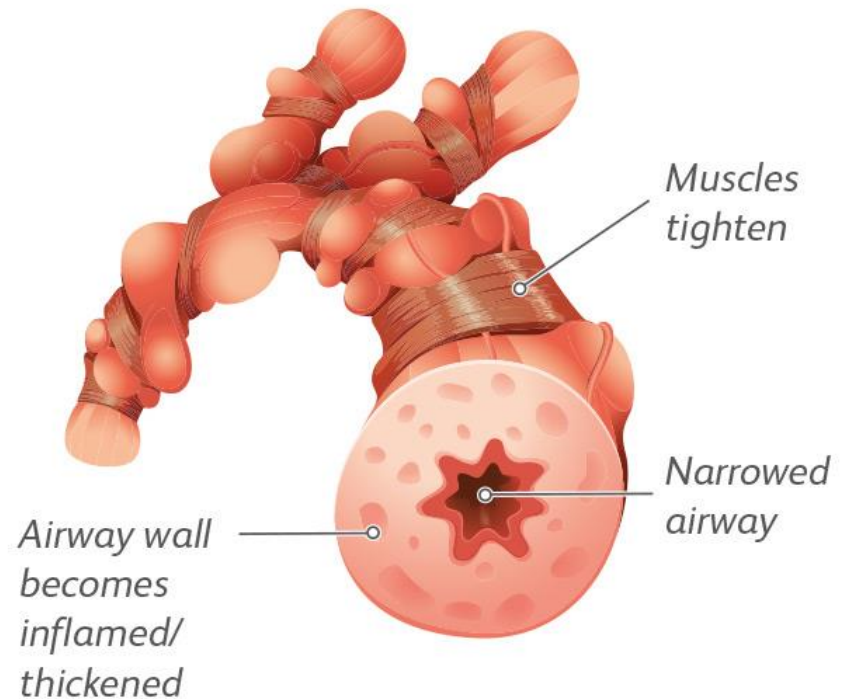
- respiratory rate  
(12 – 20 breaths per minute for adults)
- work of breathing
- listen – wheeze



## Normal airway



## Airway during asthma attack



# Dilate then Oxygenate

# ABCDE Approach **Breathing** – treatment

- Ambulance
- Oxygen
- Salbutamol (Blue Inhaler)
- Spacer





# ABCDE Approach Airway – treatment





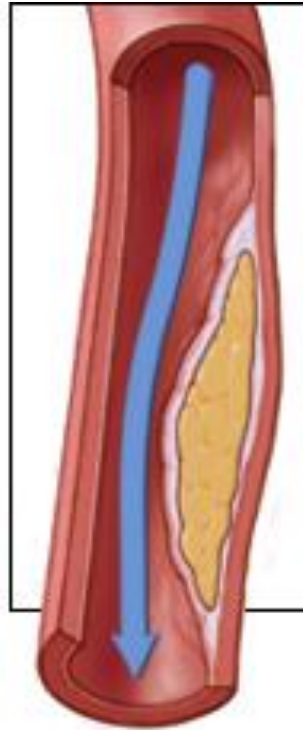
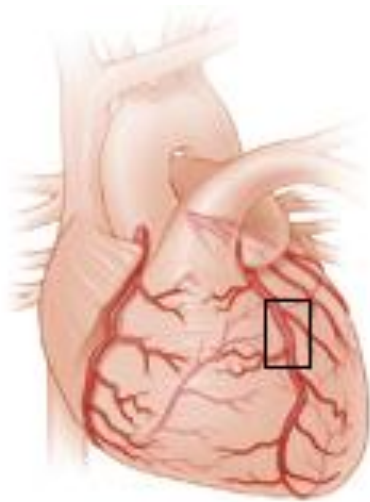
# ABCDE Approach Breathing



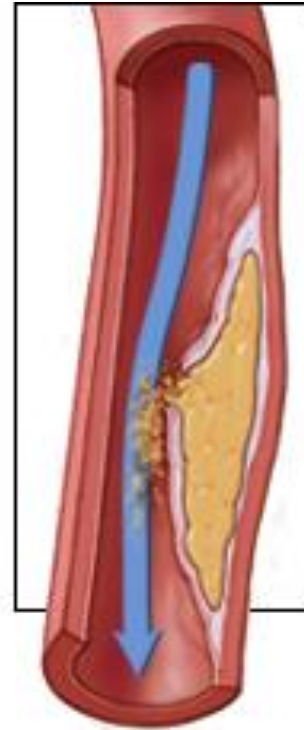
- Check patient's colour – pale, ashen colour, clammy
- CRT “Thumb Test” should be < 2 secs
  - good indication of blood pressure
  - CRT >2 secs or systolic blood pressure <90mmHg (abnormal)
- Chest tightness / pain / discomfort / heaviness / crushing sensation



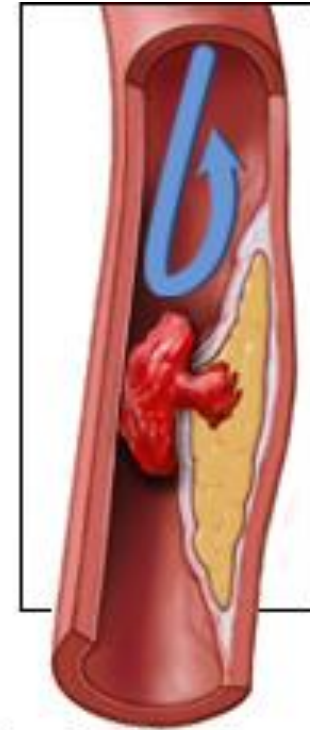
# ABCDE Approach **Circulation** – heart attack



Plaque with  
fibrous cap

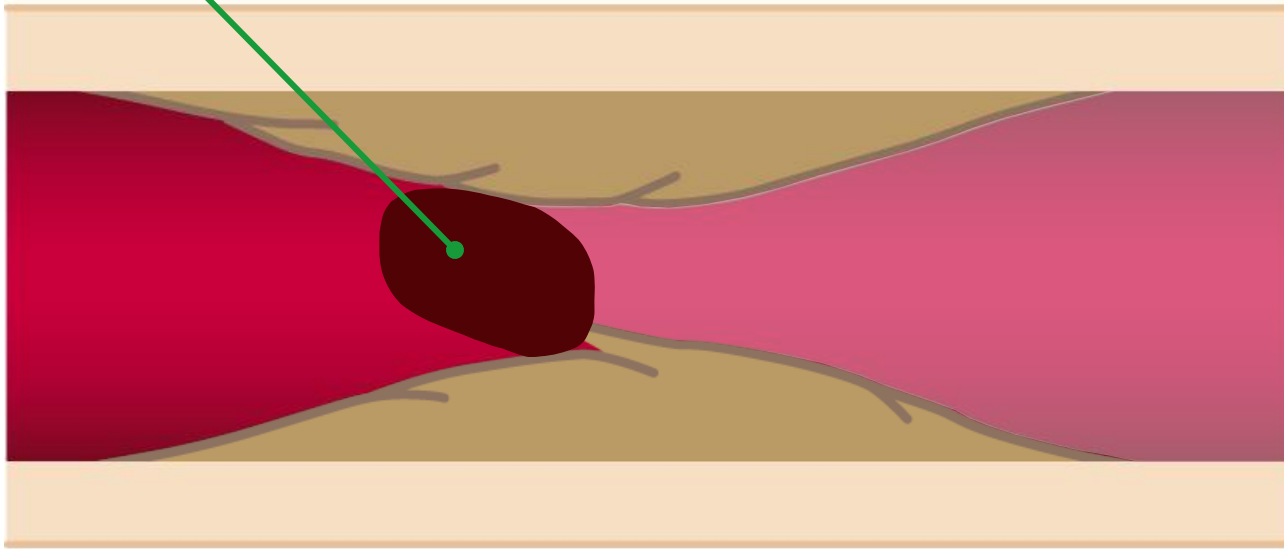


Cap  
ruptures



Blood clot forms  
around the rupture,  
blocking the artery

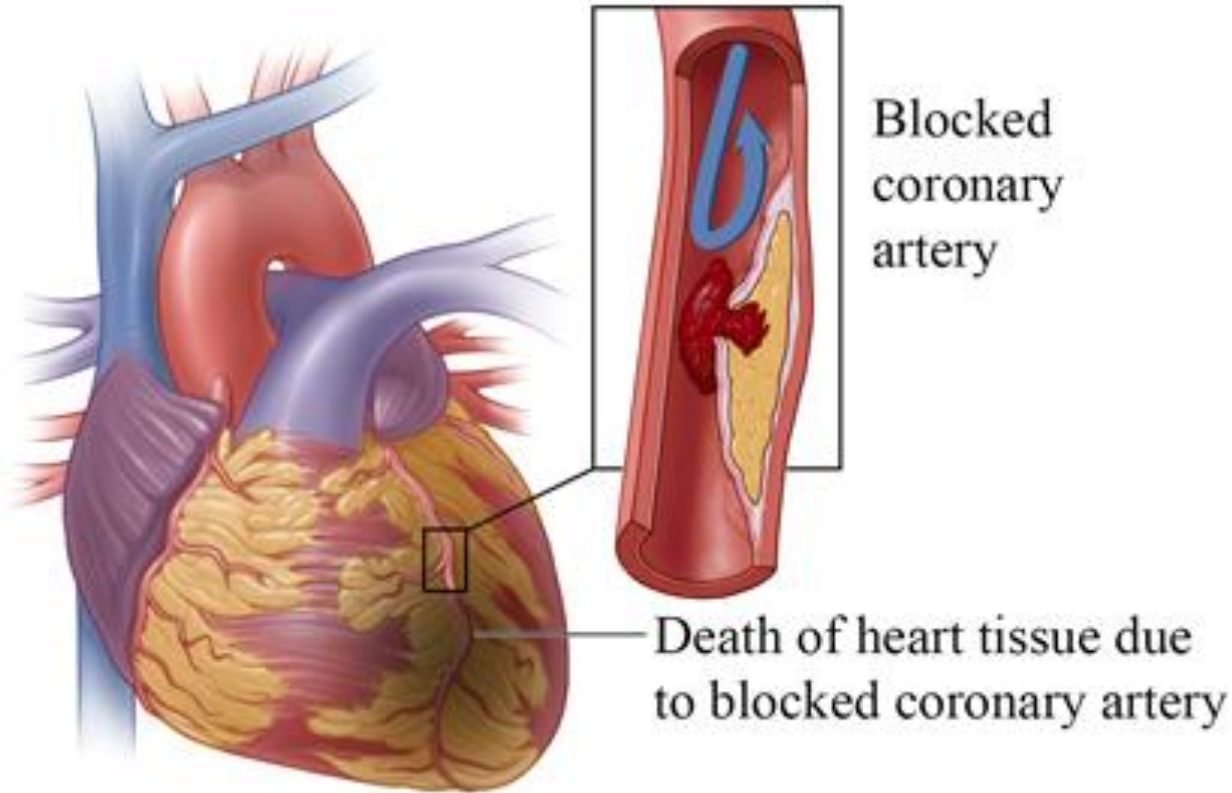
Blood Clot



Heart Attack



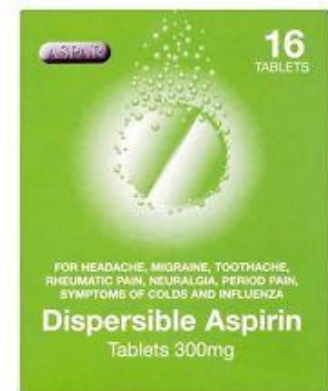
# ABCDE Approach **Circulation** – heart attack



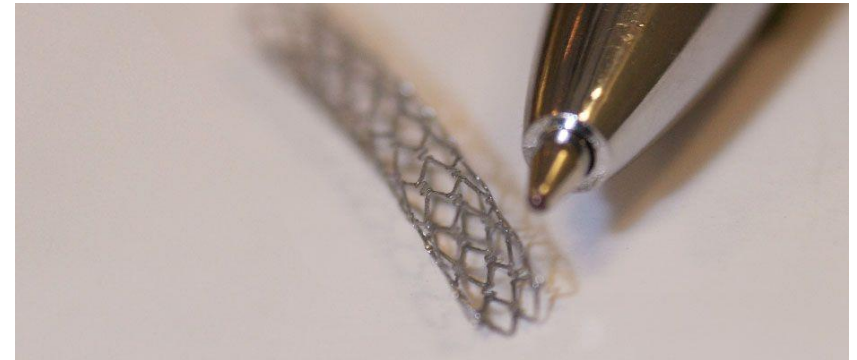
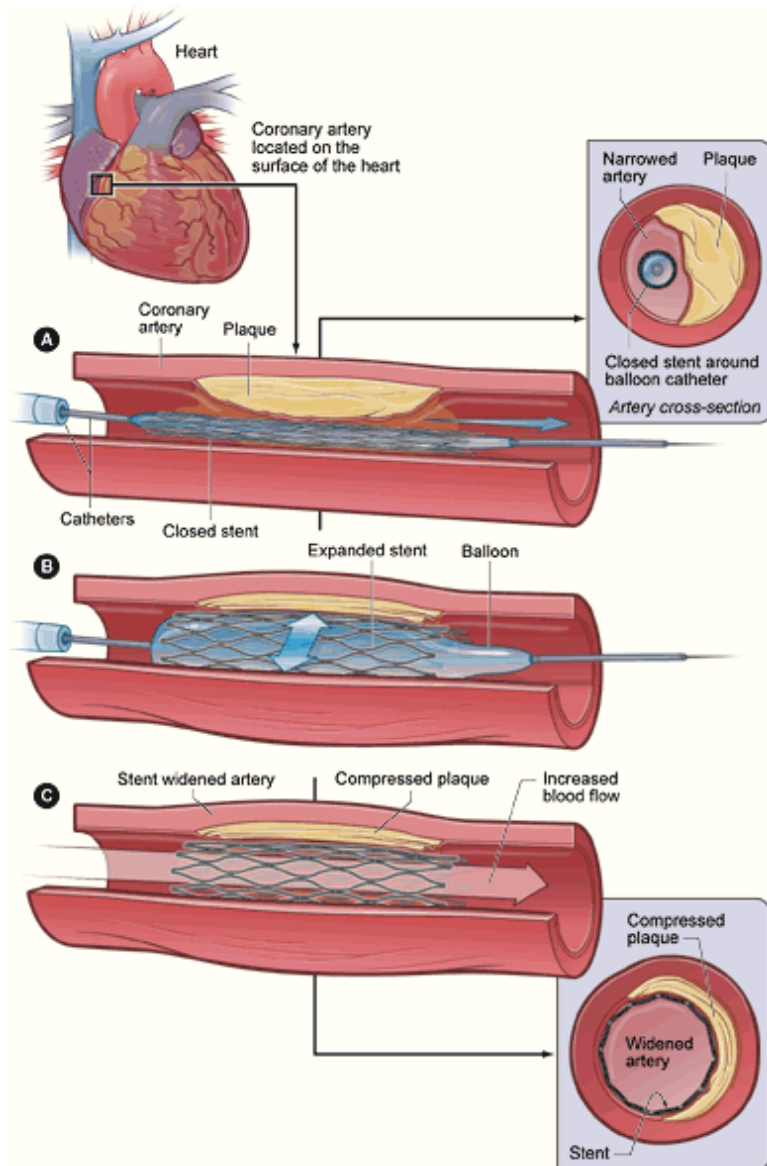
- Ambulance
- Oxygen
- Aspirin / Dispirin **300mg DISPERSIBLE**  
(can be crushed or chewed, or dissolve in small amount of water)
- GTN if no contraindications



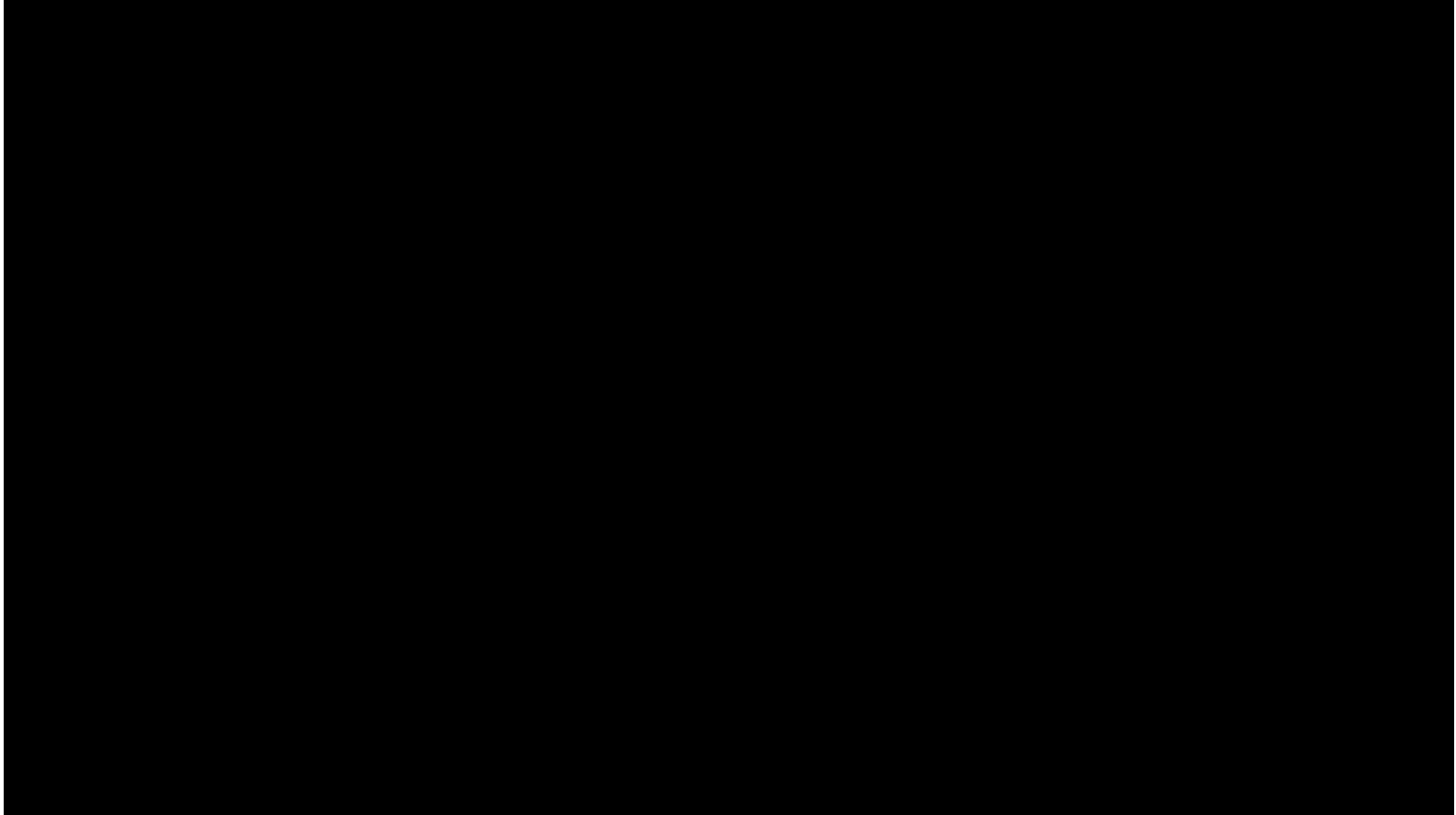
© Susan Pharmacy



# ABCDE Approach **Circulation** – heart attack stenting



# ABCDE Approach **Circulation** – heart attack stenting



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A

A.C.V.P.U.

G

Glucose -  $< 4.0\text{mmols}$

E

Eyes

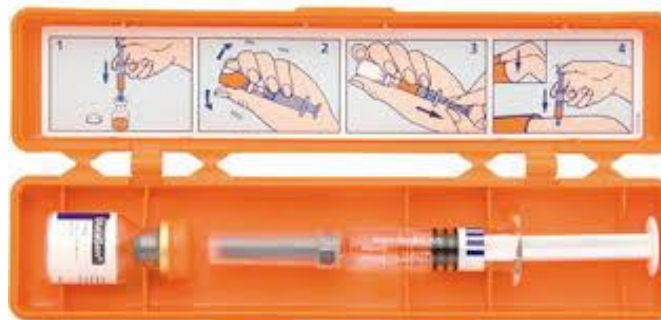
D

Drugs

# ABCDE Approach **Disability** – hypoglycaemia treatment



- Oxygen
- Ambulance?
- Glucogel/Hypostop
- Glucagon
- Recovery position



# ABCDE Approach **Disability** – seizure treatment



- Oxygen
- Ambulance
- Time the seizure
- Buccal midazolam / Rectal Diazepam



When seizure stops put patient in the recovery position and **check they are breathing regularly**



# ABCDE Approach **Disability** – Recovery position

1



2



3



4



- Look for rashes
- Bruising / swelling
- Haemorrhage / bleeding
- Maintain patients temperature

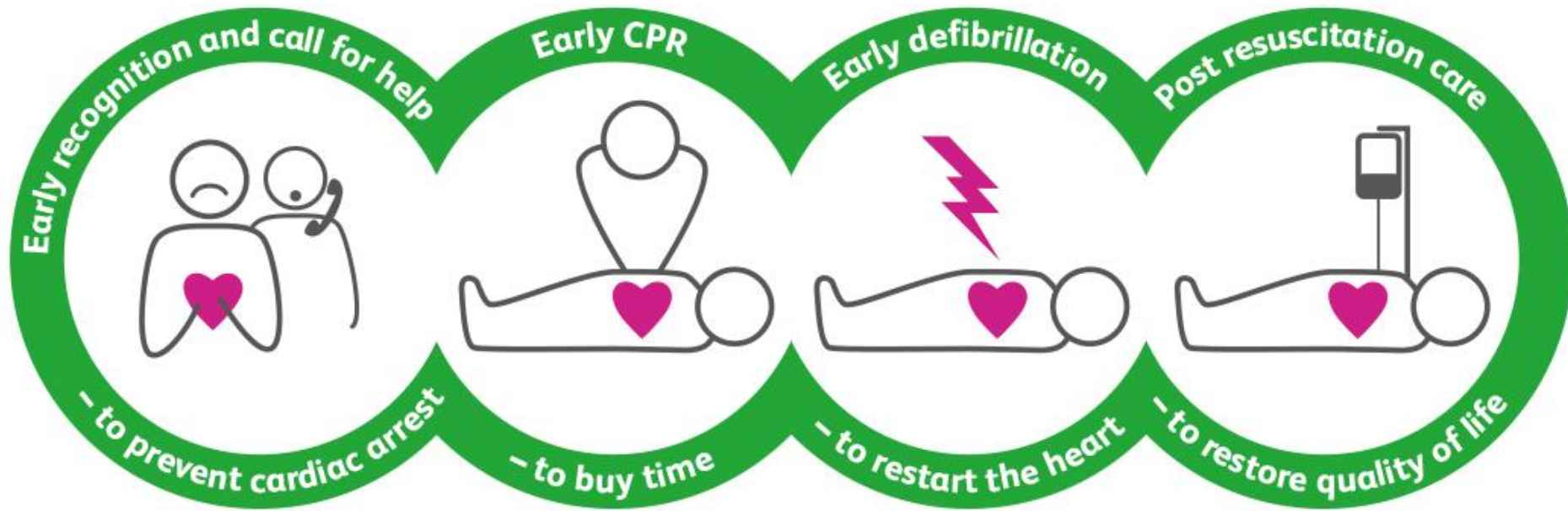


# Summary

- Early recognition may prevent cardiorespiratory arrest
- Some patients have warning signs before cardio respiratory arrest
- Take an **AMPLE** history and use the **ABCDE** assessment to recognise and treat patients at risk of cardiorespiratory arrest



# Chain of survival

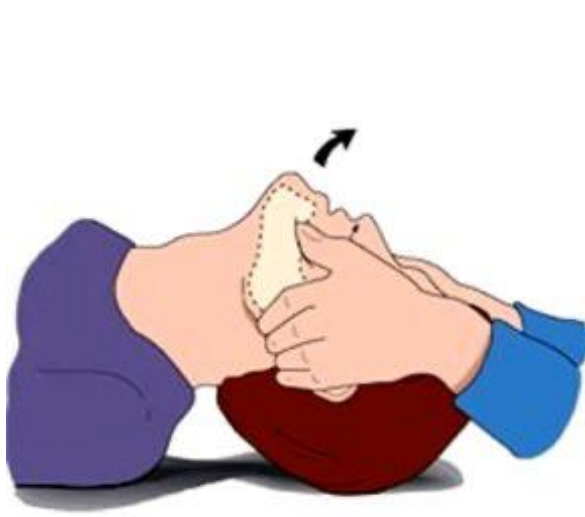


# SSS AB

- **S**cene safety
- **S**timulation
- **S**hout for help
- **A**irway
- **B**reathing



# Open the airway



Jaw thrust



Chin lift

- Jaw Thrust
- Head tilt & Chin lift

# Is the person breathing?

- Look for chest movement
- Listen for 'normal' breath sounds
- Feel for expired air
- Assess for no more than 10 seconds



# Defibrillation

- Attach defibrillator immediately and shock if indicated

Applying defibrillator pads and delivering a shock from an AED/defibrillator is unlikely to be an aerosol-generating procedure and can be undertaken with the healthcare provider wearing droplet-precaution PPE (fluid-resistant surgical mask, eye protection, short-sleeved apron and gloves).

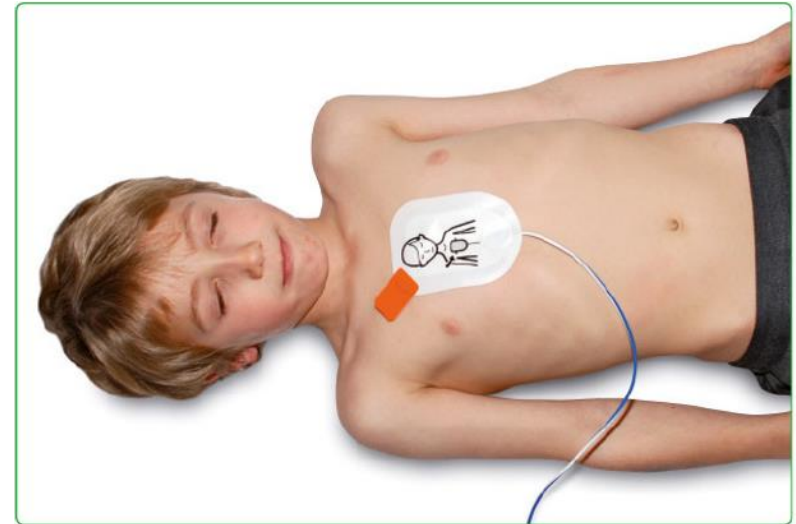
# Rule of 'Ps'



- Pendants
- Pacemakers
- Perspiration
- Patches
- Piercings







# CPR

- Start chest compressions (continuous until bag-mask device arrives).
- If not on the patient already, place an oxygen mask and give oxygen (15lt). Leave the mask on the patient until a bag-mask device arrives.

# CPR

- Once a bag-mask device arrives, proceed with a compression:ventilation ratio of 30:2
- Ensure there is a viral filter (HME filter or HEPA filter) between the self-inflating bag and airway (mask, supraglottic airway, tracheal tube) to filter exhaled breaths



# CPR

- Position your shoulders vertically above the victim's chest and press down on the sternum to a depth of **5–6 cm**
- **30:2** (Continuous chest compressions until bag-valve-mask arrives then **30:2**)
- After each compression, release all the pressure on the chest without losing contact between your hands and the sternum (**Recoil**)
- Repeat at a rate of **100–120 min**

# Ventricular Fibrillation









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# Thank you!

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