

# ACLS Study Guide

 **Regarding chest compressions:**

* A CPR Coach is recommended to ensure continuous high-quality CPR
* Pulse checks should take no more than 5-10 seconds
* Gasping or agonal respiration is an indicator of cardiac arrest
* If equipment does not function properly – begin chest compressions
* Prolonged interruptions in chest compression is a fatal mistake
* Stop compressions only when told to do so by the AED, for no more than 10 secs to check a pulse and to administer a shock
* High quality chest compressions at 100-120/minute, 2 inches in depth, allowing for adequate chest recoil, 30:2 ratio without ET tube
* Switch providers every 2 minutes or 5 cycles
* Chest compression fraction (CCF) is percentage of time compressions are being administered. Goal is > 80%.
* Charging the defibrillator before rhythm check will increase CCF

# Regarding respirations:

* With ET tube and in cardiopulmonary arrest squeeze bag every 6-8 seconds to equal 8-10 respirations/minute
* In respiratory arrest with a pulse use rate of compressions every 5-6 seconds to equal 10-12 respirations/minute
* Excessive ventilations will result in a decrease in cardiac output
* Do not allow oxygen to blow in the direction of the defibrillating pads/paddles
* To suction airway – insert Yankauer, suction on withdrawal, perform in less than 10 seconds
* No more cricoid pressure as it may impede ventilations or tube placement
* OPA (oropharyngeal airways) should be measured from the corner of the mouth to the angle of the mandible

# Regarding CO2 monitoring:

* A CO2 detector offers qualitative assessment
* Waveform capnography offers a quantitative assessment and allows for monitoring CPR quality and correct ET tube placement
* Normal range is 35-40 mmHg
* Once a Return of Spontaneous Circulation (ROSC) is achieved, the target range for PETCO2 is 35-40 mmHg
* Waveform capnography is the most reliable method to confirm placement of an ET tube
* During CPR, the goal is to maintain a PETCO2 ≥10 mmHg
* A value <10 mmHg signifies the need to improve the quality of chest compressions

# Regarding a ROSC and MI:

* Atropine increases rate, but not pressure
* 1 – 2 L of NS or LR increases pressure
* The systolic BP target is 90 mmHg
* STEMI = ST elevation myocardial infarction
* PCI = percutaneous coronary interventions such as stent placement or thrombolytics
* For STEMI - door to PCI balloon inflation should be < 90 minutes
* Therapeutic hypothermia post-arrest should only be performed on comatose patients with a target range of 32-36o C
* Once hypothermia target has been reached, maintain for 24 hours
* Recommended ASA dose is 162-325 mg

Order of preferred vascular access sites – peripheral, IO, ET, central venous

**Regarding stroke**

Prehospital notification in suspected stroke will expedite treatment

You need a negative non-contrast CT within 20 mins of hospital arrival before treating stroke with tpa

Consider endovascular tpa therapy

Cincinnati Prehospital Stroke Scale – facial drooping, pronator drift, abnl speech

**Team-based dynamics**

* If task is beyond scope – ask for new role
* Closed-loop communication ensures accurate steps
* In the event a team member is about to make a mistake, the Team Leader should address the issue immediately
* The purpose of a CPR Coach is to ensure high quality CPR
* The Team Leader should clearly delegate tasks to avoid inefficiencies during resuscitation