Mandatory Precourse Self-Assessment at least 70% pass. Bring proof of completion to class.

The ACLS Provider exam is 50 multiple-choice questions. Passing score is 84%. Student may miss 8 questions. All AHA exams are now “open resource” so student may use books and/or handouts for the exam. For students taking ACLS for the first time or updating their current card, exam remediation is permitted should student miss more than 8 questions on the exam. Viewing the ACLS Provider Manual ahead of time with the online resources is very helpful. The American Heart Association link is www.heart.org/eccstudent and has an ACLS Precourse Self-Assessment, supplementary written materials, and videos. The code for these online resources is in the ACLS Provider Manual page ii. The code is acls15. Basic Dysrhythmia knowledge is required. The exam has at least 9 strips to interpret. The course is a series of video segments then skills. The course materials will prepare you for the exam.

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**BLS Overview – CAB**

Unresponsive patient, no breathing, or no normal breathing  
Activate Emergency response and get AED  
Start CPR, shock if indicated

Push Hard and Fast - Repeat every 2 minutes  
*If person unresponsive next step is to check breathing and pulse simultaneously. Pulse check no more than 5-10 seconds
Anymore there is no pulse or unsure - COMPRESSIONS

**Elements of good CPR**

**COMPRESSIONS**
- Rate-at least 100 - 120
- Compression depth at least 2 inches, not more than 2.4 inches or 6 cm
- Switch compressors every 2 min or 5 cycles
- Minimize interruptions (less 10 secs)
- Fatal mistake to interrupt compressions – continue compress while charging

**VENTILATION**
- With perfusing rhythm squeeze the bag once every 5 to 6 seconds
- Excessive ventilation decreases cardiac output

**Stroke**
- Cincinnati Pre-Hospital Stroke Scale
- Facial Droop, Arm Drift, Abnormal Speech
- Non-contrast CT scan of the head
- Start fibrinolytic therapy as soon as possible
- Alerting the hospital will expedite patient’s care on arrival

**Acute Coronary Syndromes, STEMI**
- STEMI door-to-balloon within 90 minutes
- 12 Lead for CP, epigastric pain, or rhythm change

Recommended dose of aspirin is 160 – 325 mg
Right ventricular MI - caution with NTG

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**Cardiac Rhythm Strips to Interpret**

- Ventricular Tachycardia
  - Stable
  - Unstable
  - Monomorphic
- Supraventricular tachycardia, unstable
- Heart Blocks
  - Second-degree atroioventricular Type I
  - Second-degree atroioventricular Type II
  - Third degree atroioventricular
- Ventricular Fibrillation
- PEA, Pulseless Electrical Activity

**Bradycardia**

Need to assess stable versus unstable

**If stable . . .**
- Monitor, observe, and obtain expert consultation

**If unstable . . .**
- Atropine 0.5mg IV. Can repeat Q 3-5 minutes to 3 mg
  - Maximum dose is 3mg (Including heart blocks)
- If Atropine ineffective
  - Dopamine infusion (2-20mcg/kg/min)
  - Epinephrine infusion (2-10mcg/min)
  - Transcutaneous pacing

**Tachycardia with a Pulse**

- If unstable (wide or narrow) - go straight to synchronized cardioversion (sedate first)
- If stable narrow complex
  - obtain 12 lead
  - vagal maneuvers
  - adenosine 6mg RAPID IVP, followed by 12mg

**Pulseless Rhythms - Cardiac Arrest - CPR**

Oxygen, monitor, IV, Fluids, Glucose Check
Agonal gasps are a likely indicator

- 2 minute cycles of compressions, shocks (if VF/VT), and rhythm checks
- Epinephrine 1 mg first every 3-5 minutes (preferred method peripheral IV)

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Additional material created to enhance and supplement the learning experience and is not AHA approved.

ACLS Study Guide is courtesy of Key Medical Resources, Inc. Terry Rudd ACLS National Faculty

ACLS Study Guide 2016 May 2016, Page 1 [TCL]
Shockable Rhythms
Defibrillation
- Ventricular Fibrillation (VF)
- Ventricular Tachycardia (VT) without pulse
Biphasic: 120-200J  Monophasic: 360J
Refractory – Amiodarone 300 mg, then 150 mg
After defibrillation resume CPR, starting with chest compressions

Synchronized Cardioversion
Unstable VT, unstable SVT

Non-Shockable Rhythms
PEA - Asystole

Return of Spontaneous Circulation (ROSC)
Post Resuscitation Care
- 12 Lead
- Coronary reperfusion-capable center is the most appropriate EMS destination
- Hypothermia if DOES NOT follow verbal commands (target temperature, at least 24 hours, 32 to 36 degrees C)

Treatment
- Maintain O2 sat >94%
- Consider adv. airway and waveform capnography
- Do not hyperventilate

Waveform Capnography in ACLS (PETCO2)
- Allows for accurate monitoring of CPR
- Most reliable method to confirm and monitor ETT placement

Team Dynamics
- Closed Loop – repeat orders
- Incorrect order? – address immediately
- Task out of scope? – ask for new task or role
- Clearly delegate tasks

Points to Ponder
- Medical Emergency Teams (MET)/ Rapid Response Teams (RRT) can improve outcome by identifying and treating early clinical deterioration
- OPA – measure from corner of mouth to angle of the mandible
- Minimal systolic blood pressure is 90
- Don’t suction for more than 10 seconds
- Pulse oximeter reading low, give oxygen

Treat Reversible Causes (H’s and T’s)
- Hypoxia or ventilation problems
- Hypovolemia
- Hypothermia
- Hypo/Hyperkalemia
- Hydrogen ion (acidosis)
- Tamponade, cardiac
- Tension pneumothorax
- Toxins – poisons, drugs
- Thrombosis – coronary (AMI)
- Thrombosis – pulmonary (PE)