

## Science Summary Table

This table compares topics from 2015 with 2020, providing a quick reference to what has changed and what is new in the science of advanced cardiovascular life support.

| ACLS topic                      | 2015   | 2020   |
|---------------------------------|--|--|
| <b>Ventilation</b>              | <ul style="list-style-type: none"> <li>1 breath every 5 to 6 seconds for respiratory arrest, with a bag-mask device</li> <li>1 breath every 6 seconds for ventilation with an advanced airway in place</li> </ul>  | <ul style="list-style-type: none"> <li>1 breath every 6 seconds for respiratory arrest with or without an advanced airway and also for cardiac arrest with an advanced airway (use this rate with a bag-mask device if your local protocol is continuous compressions and asynchronous ventilations for cardiac arrest)</li> </ul> |
| <b>Bradycardia</b>              | <ul style="list-style-type: none"> <li>Atropine dose: 0.5 mg</li> <li>Dopamine dosing: 2 to 20 mcg/kg per minute</li> <li>Atropine is the first-line medication for all unstable bradycardias.</li> </ul>  | <ul style="list-style-type: none"> <li>Atropine dose: 1 mg</li> <li>Dopamine dosing: 5 to 20 mcg/kg per minute</li> <li>Give atropine to all unstable bradycardia patients as a first-line medication except heart transplant patients. Use pacing and/or dopamine or epinephrine for heart transplant patients</li> </ul>         |
| <b>Tachycardia</b>              | <ul style="list-style-type: none"> <li>Synchronized cardioversion initial recommended doses: <ul style="list-style-type: none"> <li>Narrow QRS complex, regular rhythm: 50 to 100 J</li> <li>Narrow QRS complex, irregular rhythm: 120 to 200 J</li> <li>Wide QRS complex, regular rhythm: 100 J</li> </ul> </li> <li>Wide QRS complex, irregular rhythm: defibrillation dose (not synchronized)</li> </ul>  | <ul style="list-style-type: none"> <li>Follow your specific device's recommended energy level to maximize the success of the first shock</li> <li>Wide QRS complex, irregular rhythm: defibrillation dose (not synchronized)</li> </ul>  |
| <b>Post-Cardiac Arrest Care</b> | <ul style="list-style-type: none"> <li>Titrate oxygen saturation to 94% or higher</li> </ul>   | <ul style="list-style-type: none"> <li>Titrate oxygen saturation to 92% to 98%</li> </ul>  |
| <b>Adult Chain of Survival</b>  | <ul style="list-style-type: none"> <li>5 links for both chains (IHCA and OHCA)</li> </ul>  | <ul style="list-style-type: none"> <li>6 links for both chains (IHCA and OHCA): added a Recovery link to the end of both chains</li> </ul>   |
| <b>IV/IO Access</b>             | <ul style="list-style-type: none"> <li>IV access and IO access are equivalent</li> </ul>   | <ul style="list-style-type: none"> <li>IV preferred over IO access, unless IV fails (then OK to proceed to IO)</li> </ul>  |
| <b>ACLS topic</b>               | <b>2020</b>  |  |
| <b>Cardiac Arrest</b>           | <ul style="list-style-type: none"> <li>Epinephrine 1 mg every 3 to 5 minutes or every 4 minutes as a midrange (i.e., every other 2-minute rhythm check)</li> <li>Amiodarone and lidocaine are equivalent for treatment (i.e., either may be used)</li> <li>Added maternal cardiac arrest information and algorithms (in-hospital)</li> <li>Added ventricular assist device information (VAD: LVAD and RVAD) and algorithm</li> <li>Added new prognostication diagram and information</li> <li>Recommend using waveform capnography with a bag-mask device</li> </ul>   |  |
| <b>Stroke</b>                   | <ul style="list-style-type: none"> <li>Revised stroke algorithm</li> <li>New stroke triage algorithm for EMS destination</li> <li>Focus on large vessel occlusion (LVO) for all healthcare providers</li> <li>Endovascular therapy: treatment window up to 24 hours (previously up to 6 hours)</li> <li>Both IV thrombolysis and endovascular therapy can be given/performed if time criteria and inclusion criteria are met</li> <li>Upon arrival and receiving in the ED, consider having EMS bypass the emergency department and go straight to the imaging suite (CT/MRI); initial assessment can be performed there to save time</li> <li>Titrate oxygen saturation to &gt;94%</li> </ul> |  |