

## PR20: Synchronized Cardioversion

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### Applicable To

- ACP and higher

### Indications

- Termination of tachydysrhythmias in symptomatic patients who have failed less invasive therapies
  - It is often more effective and consistent than pharmacological therapies and is generally safer for unstable patients when the precise nature of the tachydysrhythmia is not known.

### Procedure

1. Consider the need for procedural sedation (see [PR17: Procedural Sedation](#)).
2. Attach therapy electrodes. Either anterior-posterior or anterior-lateral positioning may be used. Synchronized cardioversion may be performed with therapy electrodes alone, however limb leads are strongly suggested.
3. Enable synchronized mode: press the **SYNC** button on the monitor. Observe the display screen and confirm the flagging symbol (a downward-pointing triangle) appears above each QRS complex.
  - On LifePak 15s that have been configured for primary care paramedic use, pressing **SYNC** or **LEAD** will not disable the advisory monitoring system, and will not provide access to synchronization functions. To enable synchronization on these devices, press **ENERGY SELECT** to exit the advisory mode and enable full manual operation. **CAUTION:** This is a slight change from previous workflows, and is only required on LifePak 15s that have been configured for primary care paramedic use. A patient safety risk exists where energy levels may be set for cardioversion, but synchronization has not occurred. **Always visually verify the presence of synchronization markers above the QRS complexes before charging the defibrillator for cardioversion or attempting to deliver energy.**
4. Select the appropriate energy level using the **ENERGY SELECT** buttons.
5. Charge the monitor/defibrillator and clear the patient.
6. Push **and hold** the **SHOCK** button until the energy is delivered. There will be a slight delay as the monitor attempts to time the shock with a detected R wave.
7. Reassess the patient and re-evaluate required treatment options, including supportive care or energy escalation.
8. If the patient deteriorates to ventricular fibrillation or unstable polymorphic ventricular tachycardia:
  - Confirm synchronization is off (push **SYNC** button again if necessary) and that flags have disappeared. Verify patient pulses; if no pulse, begin chest compressions.
  - Reset the energy level to 200 J.
  - Charge the monitor.
  - Clear the patient and deliver the shock.

### Notes

- Recommended initial energy levels:
  - Unstable atrial fibrillation with rapid ventricular response: 200 J.
  - Unstable monomorphic ventricular tachycardia: 100 J.
  - Unstable supraventricular tachycardia or atrial flutter: 100 J.
- If several synchronized shocks have been delivered and the rhythm fails to convert, consider switching pad placement: if the therapy electrodes were anterior-lateral, place them anteriorly-posteriorly (or vice versa) and attempt to cardiovert again at the last energy level used.

**Changelog**

- 2023-01-05: added supplemental information on use of PCP-configured monitor/defibrillators

