

**Assess appropriateness for clinical condition.  
Heart rate typically  $\geq 150/\text{min}$  if tachyarrhythmia.**

**Identify and treat underlying cause**

- Maintain patient airway; assist breathing as necessary
- Oxygen as indicated
- Cardiac monitor to identify rhythm; monitor blood pressure and oximetry

**Persistent tachyarrhythmia causing:**

- Hypotension?
- Acutely altered mental status?
- Signs of shock?
- Ischemic chest discomfort?
- Acute heart failure?

**Synchronized cardioversion\***

- Consider sedation
- If regular narrow complex, consider adenosine

**Wide QRS?  
>0.12 seconds**

- IV access and 12-lead ECG if available
- Consider adenosine only if regular and monomorphic
- Consider antiarrhythmic infusion
- Consider expert consultation

- IV access and 12-lead ECG if available
- Vagal maneuvers
- Adenosine (if regular)
- $\beta$ -Blocker or calcium channel blocker
- Consider expert consultation

**Doses/details**

**Synchronized cardioversion\*\***

Initial recommended doses:

- Narrow regular: 50–100 J
- Narrow irregular: 120–200 J biphasic or 200 J monophasic
- Wide regular: 100 J
- Wide irregular: Defibrillation dose (not synchronized)

**Adenosine IV dose:**

First dose: 6 mg rapid IV push; follow with NS flush.  
Second dose: 12 mg, if required

**Antiarrhythmic infusions for stable wide-QRS tachycardia procainamide IV dose:**

20–50 mg/min until arrhythmia suppressed, hypotension ensues, QRS duration increases > 50% or maximum dose 17 mg/kg given.  
Maintenance infusion: 1–4 mg/min.  
Avoid if prolonged QT or CHF.

**Amiodarone IV dose:**

First dose: 150 mg over 10 minutes.  
Repeat as needed if VT recurs. Follow by maintenance infusion of 1 mg/min for first 6 hours.

**Sotalolol IV dose:**

100 mg (1.5 mg/kg) over 5 minutes.  
Avoid if prolonged QT.

\* Link MS, Atkins DL, Passman RS, Halperin HR, Samson RA, White RD, Cudnik MT, Berg MD, Kudenchuk PJ, Kerbenchuk PJ, Kerber RE. "Part 6: electrical therapies: automated external defibrillators, defibrillation, cardioversion, and pacing: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care." *Circulation*. 2010;122(suppl 3):S706-S719. [http://circ.ahajournals.org/content/122/18\\_suppl\\_3/S706](http://circ.ahajournals.org/content/122/18_suppl_3/S706) \*\* Scholten M, Szili-Torok T, Klootwijk P, Jordaens L. Comparison of monophasic and biphasic shocks for transthoracic cardioversion of atrial fibrillation. *Heart* 2003;89:1032-1034

