



**REGION 11  
CHICAGO EMS SYSTEM  
PROTOCOL**

Title: Adult Tachycardia with a Pulse – BLS/ALS

Section: Cardiovascular

Approved: EMS Medical Directors Consortium

Effective: June 1, 2026

## **ADULT TACHYCARDIA WITH A PULSE – BLS/ALS**

### **I. PATIENT CARE GOALS**

1. Maintain adequate oxygenation, ventilation, and perfusion.
2. Control ventricular rate.
3. Restore regular sinus rhythm in unstable patient.
4. Evaluate for underlying cause:
  - a. Medications (caffeine, diet pills, thyroid, decongestants)
  - b. Drugs (cocaine, amphetamines)
  - c. History of dysrhythmia
  - d. Congestive heart failure (CHF)

### **II. PATIENT PRESENTATION**

*Patients will have an elevated heart rate for age and may or may not also present with associated signs or symptoms such as palpitations, dyspnea, chest pain, syncope/near-syncope, hemodynamic compromise, altered mental status, or other signs of end organ decreased perfusion.*

*Rhythms include:*

- Atrial fibrillation (A-Fib)
- Atrial flutter
- Multifocal atrial tachycardia (MAT)
- Supraventricular tachycardia (SVT)
- Torsades de Pointes (TdP)
- Ventricular tachycardia (VT)

#### **A. Inclusion Criteria**

Heart rate typically greater than 150 in adults, assess appropriateness for clinical condition.

#### **B. Exclusion Criteria**

Sinus tachycardia (heart rate over 100) with hemodynamic stability.

### **III. PATIENT MANAGEMENT**

#### **A. Adult Management**

1. Manage airway as necessary.
2. Administer oxygen as appropriate with a target of achieving 94–98% saturation.



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3. **ALS:** Initiate monitoring and perform 12-lead ECG.
4. **ALS:** Establish IV access.
5. Check blood glucose and treat if needed.
6. **ALS:** Evaluate the tachycardia and assess for patient stability.
  - a. Assess for hemodynamic stability
  - b. Assess narrow (QRS < 0.12 second) or wide (QRS ≥ 0.12 second)
  - c. Assess regular or irregular rhythm
7. Apply defibrillation pads in the Anterior-Posterior position.
8. Consider the following additional therapies if tachycardia with signs and symptoms or hemodynamic instability continues:
  - a. **Regular Narrow Complex Tachycardia – Stable (SVT)**
    - i. Perform vagal maneuvers
    - ii. Adenosine 6 mg IV (proximal site) followed by 10 mL fluid bolus using 3-way stopcock
      - If tachycardia continues, give adenosine 12 mg IV
      - A third dose of adenosine, 12 mg IV, can be given
  - b. **Regular Narrow Complex Tachycardia – Unstable**
    - i. Deliver synchronized shock of 100J, then 150 J, then 200 J per Synchronized Cardioversion Procedure
    - ii. For responsive patients, consider analgesia per Pain Management Protocol
  - c. **Irregular Narrow Complex Tachycardia – Stable** (atrial fibrillation, atrial flutter, multifocal atrial tachycardia)
    - i. Monitor hemodynamic status
  - d. **Irregular Narrow Complex Tachycardia – Unstable**
    - i. For atrial fibrillation or atrial flutter deliver a synchronized shock at 200 J per Synchronized Cardioversion Procedure
    - ii. For responsive patients, consider analgesia per Pain Management Protocol
  - e. **Regular Wide Complex Tachycardia – Stable** (ventricular tachycardia, supraventricular tachycardia, atrial flutter with aberrancy, accelerated idioventricular rhythms, pre-excited tachycardias with accessory pathways)
    - i. Monitor and transport
  - f. **Regular Wide Complex Tachycardia – Unstable**
    - i. Deliver a synchronized shock of 100 J, 150 J, 200 J per Synchronized Cardioversion Procedure
    - iii. For responsive patients, consider analgesia per Pain Management Protocol



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- g. Irregular Wide Complex Tachycardia – Stable** (Atrial fibrillation with aberrancy, pre-excited A-fib (i.e., A-fib using an accessory pathway), multifocal atrial tachycardia (MAT) or polymorphic VT/Torsades de Pointes)
  - a. Monitor hemodynamic status, often become unstable.
  - b. For polymorphic ventricular tachycardia with a gradual change in amplitude and twisting of the QRS complexes across the isoelectric line on the ECG (Torsades de Pointes): Administer magnesium 2 grams slow IV push.
  
- f. Irregular Wide Complex Tachycardia – Unstable**
  - i. For polymorphic ventricular tachycardia, deliver an immediate unsynchronized defibrillation at 200 Joules
  - ii. For polymorphic ventricular tachycardia with a gradual change in amplitude and twisting of the QRS complexes across the isoelectric line on the ECG (Torsades de Pointes): Administer magnesium 2 grams slow IV push after immediate unsynchronized defibrillation at 200J.
  - iii. For responsive patients, consider analgesia per Pain Management Protocol prior to defibrillation.

#### IV. NOTES/EDUCATIONAL PEARLS

##### A. Key Considerations

1. Causes:
  - a. Hypovolemia
  - b. Hypoxia
  - c. Hydrogen (acidosis)
  - d. Myocardial infarction
  - e. Hypokalemia/Hyperkalemia
  - f. Hypoglycemia
  - g. Hypothermia
  - h. Toxins/Overdose
  - i. Tamponade
  - j. Tension pneumothorax
  - k. Thrombus – central or peripheral
  - l. Trauma
  - m. Hyperthyroidism
  
2. Atrial fibrillation rarely requires cardioversion in the field. As it is difficult to determine the onset of this rhythm, the risk of stroke needs to be considered prior to cardioversion.
  
3. A wide-complex irregular rhythm should be considered pre-excited Atrial fibrillation; extreme care must be taken in these patients.
  - a. Characteristic ECG findings include a short PR interval and, in some cases, a delta wave.
  - b. Avoid AV nodal blocking agents such as adenosine in patients with pre-excitation Atrial fibrillation (e.g., Wolff-Parkinson-White Syndrome) because these medications may cause a paradoxical increase in the ventricular response.
  - c. Blocking the AV node in some of these patients may lead to impulses that are transmitted exclusively down the accessory pathway, which can result in ventricular fibrillation.



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