

Adult Tachyarrhythmia With a Pulse Algorithm

Cascading numbered boxes correspond to actions the provider should perform in sequence. Each box is separated by an arrow that signifies the pathway the provider should take. Some boxes are separated by 2 arrows that lead to different boxes, meaning that the provider should take a different pathway depending on the outcome of the previous action. Pathways are hyperlinked.

Box 1

Assess appropriateness for clinical condition. Heart rate typically greater than or equal to 150/minute if tachyarrhythmia.

Box 2

Initial assessment and support

- Maintain patent airway; assist breathing as necessary
- Oxygen (if hypoxic)
- Continue cardiac monitoring to identify rhythm; monitor blood pressure and oximetry
- IV access
- 12-lead ECG, if available

Box 3

Persistent tachyarrhythmia causing:

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

If Yes, proceed to [Box 6](#).

If No, proceed to [Box 4](#).

Box 4

Wide QRS? Greater than or equal to 0.12 second

If Yes, proceed to [Box 8](#).

If No, proceed to [Box 5](#).

Box 5

- Vagal maneuvers (if regular)
- Adenosine (if regular)
- β -Blocker or calcium channel blocker
- Consider expert consultation

Box 6

Synchronized cardioversion

- Sedate whenever feasible
- If regular narrow complex, consider adenosine

Proceed to [Box 7](#).

Box 7

If refractory, consider

- Underlying cause
- Need to increase energy level for next cardioversion
- Addition of antiarrhythmic drug
- Expert consultation

Box 8

Consider

- Adenosine only if regular and monomorphic
- Antiarrhythmic infusion
- Expert consultation

Proceed to [Box 7](#).

Sidebar: Doses/Details

Synchronized cardioversion:

Refer to your specific device's recommended energy level or to relevant 2025 Guidelines sections to maximize first shock success. If not known, use the maximum energy setting.

Adenosine IV dose:

First dose: 6 milligrams rapid IV push; follow with NS flush.

Second dose: 12 milligrams if required.

Antiarrhythmic Infusions for Stable Wide-QRS Tachycardia

Procainamide IV dose:

20 to 50 milligram per minute until arrhythmia suppressed, hypotension ensues, QRS duration increases greater than 50%, or maximum dose 17 milligrams/kilogram given.

Maintenance infusion: 1 to 4 milligrams per minute. Avoid if prolonged QT or CHF.

Amiodarone IV dose:

First dose: 150 milligrams over 10 minutes. Repeat as needed if VT recurs.

Follow by maintenance infusion of 1 milligrams per minute for first 6 hours.