



• A sustained heart rate greater than 100 beats per minute that is causing instability in an adult (18 years & older)

WARNINGS

- For tachycardia without a pulse refer to C01 (EMR) or C02.1 (PCP / ICP / ACP)
- For tachycardia in an infant, child, or adolescent refer to C06.2

NOTES

This care map has been adapted from the Heart&Stroke[™] 2020 Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiac Care, and the Adult Cardiac Life Support (ACLS) course content (appendix A).

- 1. Symptoms and signs of an unstable tachycardia in an adult include:
 - Acutely altered level of consciousness (LOC)
 - Hypotension, hypoperfusion, or shock
 - Chest pain or discomfort suggestive of myocardial ischemia
 - Acute decompensated heart failure or acute cardiogenic pulmonary edema
- 2. Try to differentiate if the instability is due to the tachycardia itself or the result of something else. DO NOT DELAY TREATMENT IF THE PATIENT IS UNSTABLE .

A heart rate (HR) under 150 beats per minute will not usually cause hemodynamic instability in fit adults. However, older patients and those with underlying heart conditions, cardiac output may be sensitive to any decrease in diastolic filling time, even with a HR well below 150 bpm.

3. Stable atrial fibrillation (or flutter) should not be cardioverted in the prehospital setting, due to the small but significant risk of thromboembolism. Rate control with a beta blocker or calcium channel blocker may be indicated if the time to medical care will be prolonged.

Just like individuals with normal sinus rhythm who develop sinus tachycardia in response to conditions such as hypovolemia or fever, individuals with chronic atrial fibrillation (AF) may develop a rapid ventricular response when they compensating for an underlying condition. Do not attempt rate control or cardioversion before fixing the primary problem.

- 4. Patients with paroxysmal supraventricular tachycardia (PSVT) may have a wide QRS interval (greater than 120 milliseconds) if it is accompanied by aberrant conduction, but the complexes are always very regular and monomorphic.
- 5. Polymorphic complexes (especially if bizarre-appearing) or a history of coronary artery disease strongly suggest ventricular tachycardia (VT).
- 6. As a general rule, begin cardioversion in adults at 100 Joules. If a single shock fails to convert, repeat up to two more times increasing the current by 50 Joules with each subsequent shock. A disorganized rhythm like AF may need higher energy (120 to 200 Joules).

With extremely polymorphic complexes, a defibrillator may be unable to synchronize. In this case, turn off the synchronization and defibrillate with 120 to 200 Joules.

When performing cardioversion on a patient with an implanted cardioverter defibrillator (ICD) or pacemaker, place the electrodes at least 8 centimeters (3 inches) away from the pulse generator.

Do not perform cardioversion on a patient with a left ventricular assist device (LVAD).

7. Synchronized cardioversion is painful, albeit temporarily. If time and the patient's hemodynamics allow, paramedics with the intermediate (ICP) should provide analgesia before cardioverting. Paramedics with the ACP work scope should consider full procedural sedation and analgesia (PSA).

Watch for hypotension in the patient who may be compensating for poor cardiac output.

| LINKS | | |
|-------|--|--|
| • | A01 - Standard Clinical Approach | |
| • | A13 - Procedural Sedation & Analgesia | |
| • | C01 - Basic Cardiac Arrest & Post Resuscitation Care | |
| ٠ | C02.2 - Advanced Cardiac Arrest (Adult) | |
| ٠ | C06.2 - Tachycardia (Pediatric) | |
| ٠ | M01 - Adenosine | |
| • | M10 - Diltiazem | |
| ٠ | M14 - Amiodarone | |
| • | M23.3 - Metoprolol | |

| APPROVED BY | | |
|----------------------|--------------------------------|--|
| Buftsterel | formand. | |
| EMS Medical Director | EMS Associate Medical Director | |

VERSION CHANGES (refer to X03 for change tracking)

- Retitled
- Addition of advanced work scope
- Separation into adult and pediatric (C06.2) protocols



Adult Tachycardia With a Pulse Algorithm



Advanced Cardiovascular Life Support

